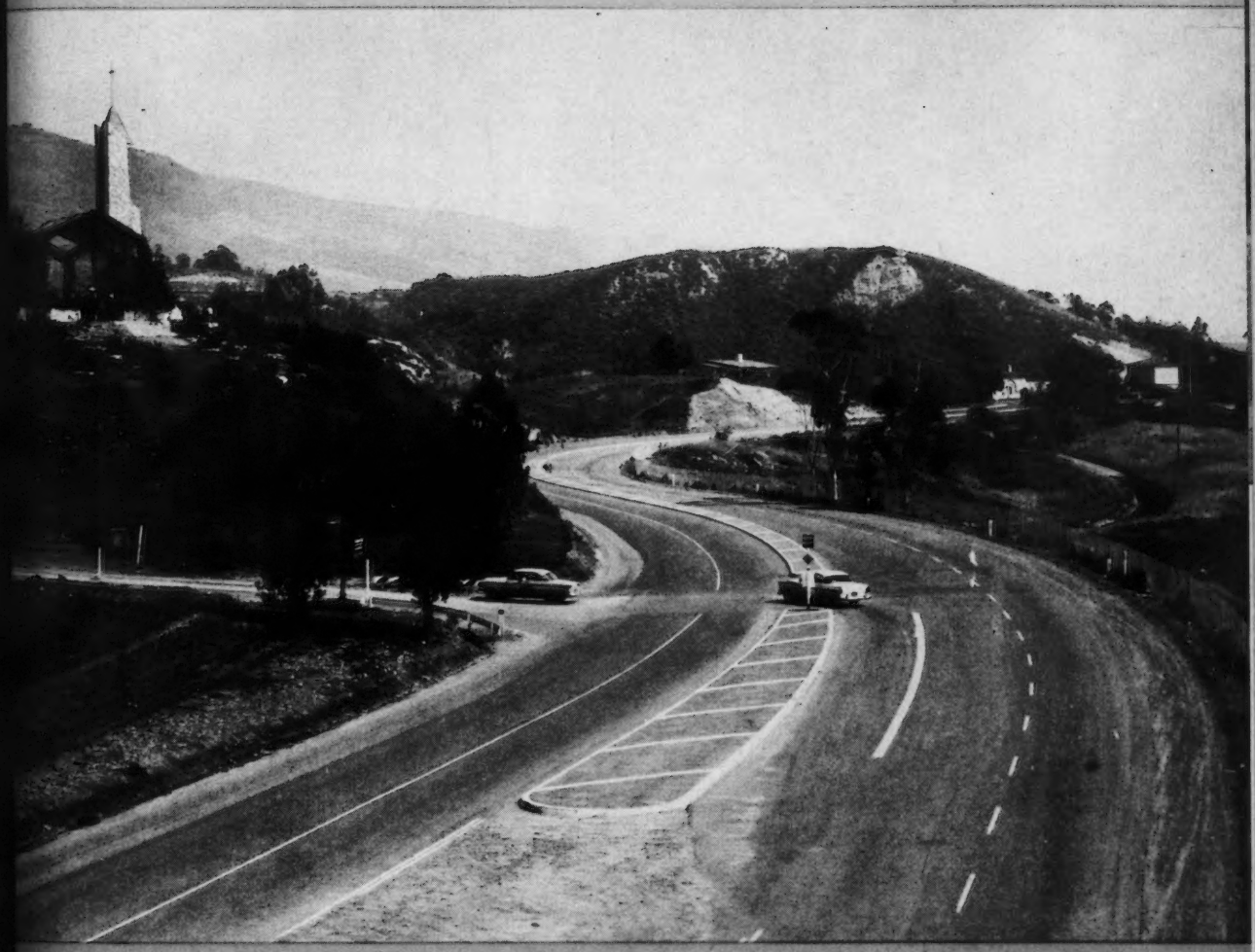
JULY, 1957

TRAFFIC ENGINEERING



- Special Operational Problems on Controlled Access Facilities
- Radio Controlled Traffic Counting
- Traffic Engineering in Melbourne, Australia
- Use of Pedestrian Delay in "Walk-Wait" Signals

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OFFICIAL PUBLICATION OF THE INSTITUTE OF TRAFFIC ENGINEERS

Vol. 27 JULY, 1957 Number 10

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COVER: Palos Verdes Drive South in vicinity of Abalone Cove, Los Angeles County, California. Use of left-turn pocket lane in divided roadway at tourist attraction. Wayfarer's Chapel, a glass walled church in upper left of photograph, attracts a large number of visitors during the summer months.

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aily Journal

Volume 40
Number 16

ws That Interests All

May 17, 1957

CITY PARKING AUTHORITY OKs TOKENS

Good-will Coins Big Success!

Mr. Irving Half, Chairman, Homestead Borough Parking Authority, Homestead, Pa. operates a Duncan-Miller Model 60 Meter with Good-Will token.

Shoppers Parking Stores, a collective group of Homestead, Pennsylvania merchants interested in the promotion of adequate customer parking, readily agree that the availability of Duncan-Miller's Good-Will Token Feature has provided the means for each merchant, large or small, to participate in this low cost program of customer parking subsidization.

BUSINESS ASSET

By making it possible for all merchants to take an active part in the promotion of off-street parking facilities through the use of the Good-Will Token, the return of direct benefits in the form of continued customer patronage are equitably distributed throughout the business district.

After one year of operation, a total of 86,257 Good-Will Tokens were inserted into 222 Duncan-Miller Model "60" Meters in three off-street lots. This represented a total of 43,128 hours of free parking time given to customers of Shoppers Parking Stores as a gesture of appreciation for customer patronage. Each token issued at the merchant's discretion purchased one-half hour parking time in a Duncan-Miller Meter.

Merchant members of Shoppers Parking Stores purchase Good-Will Tokens from the Homestead Chamb of Commerce, who in turn procu them at nominal cost from the Hom stead Borough Parking Authority administrative operators of the Bor ough's off-street parking program.

By recognizing the importance of adequate off-street customer parking as a business stimulant for the central business district, the Homestead Borough Parking Authority's progressive development program, under the forceful direction of its Chairman, Mr. Irving Half, represents an outstanding example of achievement through co-operative effort.

There is no question the advantages of Duncan-Miller's Good-Will Feature can be successfully applied in promoting your off-street parking facilities. We —

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Frankly Speaking . . .

THE INSTITUTE OF TRAFFIC ENGINEERS will convene in Detroit in September for its 27th Annual Meeting. Because of the circumstances of national attention to the highways and traffic problems of the nation, and the holding of the convention in the motor capital of the nation, more attention than ever before will probably be drawn to the conduct and actions of the Institute at this Meeting.

Membership in the Institute includes the nation's best informed and most authoritative traffic engineering personnel. An important objective and accomplishment to be derived from our meeting in convention is to summarize some of the best thinking of our members and to direct the constructive leadership of our organization toward the betterment of traffic facilities throughout the nation.

Each member of the Institute has an opportunity to express himself toward these objectives. President McMonagle and the Board of Direction has appointed a Resolutions Committee under the Chairmanship of Mr. Herbert C. Higgins, and includes Messrs. James E. P. Darrell, D. Grant Mickle, Allen R. Pepper, and Paul L. Ristroph, as members, for the purpose of gathering in advance of the September meeting, the substance of important resolutions to be considered by the membership for adoption at the Convention.

Thoughtful members should be contacting one or more members of the Resolutions Committee at this time to express their particular views as to the important policies which resolutions of the Institute can properly direct to the attention of our friends in other professional societies, to traffic and highway agencies at all levels, and the motoring public.

The action that is taken in Detroit will reflect to a large measure the interest of our membership and the leadership of our profession. If you feel that you have a contribution to make in the form of the substance of a resolution to be considered at the Annual Meeting, don't let it be overlooked because of your failure to communicate with Mr. Higgins or some other member of the Resolutions Committee.

JOSEPH E. HAVENNER
Vice President
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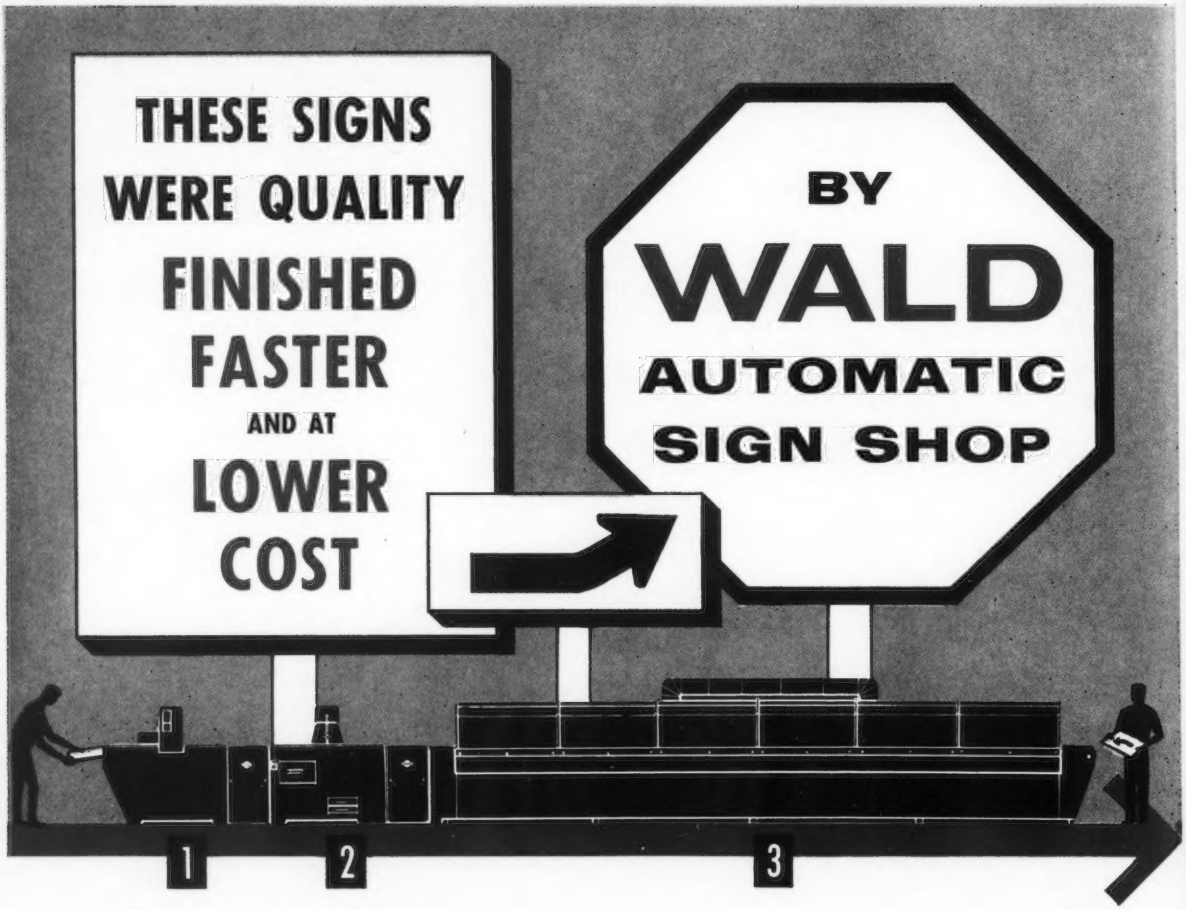

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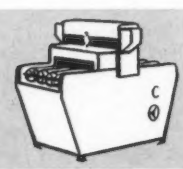
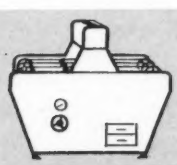


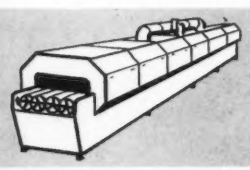
THE WALD AUTOSPRAY has a reciprocator-gun mechanism capable of spraying all types and consistencies of coating materials, paints and binders. Precise control assures uniform surface on the sign.

2



THE WALD AUTOREFLECTOR inlays spheric-reflective material. The tiny glass spheres are metered accurately into the binder or paint film at any rate of application desired.

3



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Special Operational Problems on Controlled Access Facilities

By Charles M. Noble
(Mem., ITE)
Secretary to the Governor,
State of Ohio

Note: This paper will be presented in two installments, with Part 2 appearing in an early issue. The paper originally appeared under the same title as Proceedings Paper No. 1249, Journal of the Highway Division, Proceedings of the American Society of Civil Engineers, Volume 83, No. HW2, May 1957.

BITTER EXPERIENCE in populous areas has demonstrated conclusively that control of access on major travel arteries is a vital necessity. Lack of such control results in a rapidly depreciating highway not only in volume but also in facility of movement and safety. The economic loss due to such depreciation is enormous. Today modern express highways adequate to cope with current and prospective traffic volumes and speed cost so much money that the nation can no longer afford deterioration and obsolescence. The highways built today must maintain their efficiency and safety indefinitely. The tragic loss in death and injury is reason alone for the controlled access principle. But in addition to this compelling reason, the controlled access highway is a builder of economic health and a developer of the region through which it passes. This economic upbuilding has been proved over and over again throughout the nation and now can no longer be open for debate. The upsurge of development is so swift that rural countryside is transformed in a few years to bustling prosperity, dramatically demonstrating the urgent need of access control to preserve the economic value and safety of the traffic artery.

One of the major objectives of the controlled access highway is to relieve obsolete and over-crowded local highways by diverting through traffic, but without destroying business generated by the automotive vehicle. Freeing local traffic ways from interference of that segment of through traffic not desiring to stop, will make more street space for those vehicles that wish to pause for service, shopping, recreation and overnight accommodations. The slogan "every vehicle a customer" can have meaning if broad public interest is recognized and controlled access planning includes provision for services for the travelling public.

Control of access introduces new problems in administration and operation that at first may appear formidable but which will yield to informed planning and organization. The passage of the. Federal Aid Act of 1956, which features the Interstate System of Highways (a 41,000 mile network) places the problem of operation before highway administrators. Intra-continental expressways traversing both rural and urban areas preclude promiscuous exit and entry, and planning for many services and necessities hitherto considered beyond the field of the highway official now must receive careful and thoughtful consideration. In a sense, the highway administrator will have the public in his care. Consequently the "OPERATION" of such highways has now become an important issue.

It would appear quite logical for highway departments to establish an Operations Division, with a Director of Operations. This operating division may become as important and render as essential service as the operating department of major railroads. It seems likely that it will take its place beside design and construction as a major activity in the highway department. Express highway operations include a variety of activities now handled by various and often uncoordinated organizations, the principal items of which are:

1. Traffic Operations.
   - (A) Safety surveillance.
   - (B) Safety programs.
   - (C) Accident investigation and analysis.
   - (D) Development of safety measures.
   - (E) Signs, signals and markings.
   - (F) Accident statistics and reporting.
2. Policing.
   - (A) Accident prevention.
   - (B) Enforcement.
   - (C) Aids to motorists.
   - (D) Crime detection.
3. Communication.
   - (A) Radio.
   - (B) Television.
   - (C) Roadside public telephones.
4. Service.
   - (A) Fuel, water, oil, accessories.
   - (B) Comfort.
   - (C) Food.
   - (D) Repairs, flat tire, towing.
   - (E) Fire.
   - (F) Ambulance, medical.
   - (G) Overnight accommodations.
5. Maintenance.
   - (A) Roadway repairs.
   - (B) Roadside care.
   - (C) Structural repairs, painting.
   - (D) Drainage.
   - (E) Snow removal, ice control.

Traffic Operations

Traffic operations are established now in nearly all highway departments but will assume new and challenging responsibilities in the years ahead under the leadership of trained traffic engineers. Intelligent analysis of traffic needs and constant surveillance can result in reduction in accidents, the saving of human life and the comfort and satisfaction of the motoring public.

Police

Policing is an essential function that must be integrated with operations. Al-

though state police usually operate under a different department of state government, there is no reason why this function can not be closely coordinated with highway operations. This is evidenced by completely successful integration of the 88-man State Police detachment assigned to the New Jersey Turnpike. This detachment monitors all Turnpike operations at headquarters through the micro-wave Turnpike radio system which in turn is connected to State Police headquarters and the Pennsylvania Turnpike radio system. The police operate on an around the clock schedule and are an effective task force for traffic regulation, enforcement and criminal detection. They must be at the scene of all accidents not only to investigate the accident and apprehend violators but to direct traffic, render first aid and summon wreckers, fire apparatus, ambulance and first-aid squads. Police contribute substantially to accident prevention by halting drivers that are driving unsafely or that are intoxicated or sleepy. Many lives have been saved by this activity. Police are also a service force in affording protection to stranded motorists summoning aid for gasoline, flat tire or repairs and often helping the motorist to start his car. This adds tremendously to the safety, comfort and convenience of the traveller and enhances the economic benefits of automotive transportation. In the year 1955, police aided 44,000 stranded motorists on an eastern Turnpike.

Communications

More than ever communications will be vital to successful operations on the highway system. Radio with accompanying dial radio phones, teletype and facsimile will be indispensable. In some urban areas with dense traffic, television surveillance may be necessary to detect instantly accidents or other disturbances so police, ambulance, fire department or other aid may be dispatched to the scene immediately. Protracted tie-up of the traffic stream results in heavy economic loss when large volumes of traffic are involved. In rural areas, roadside telephone stations equipped with acceleration and deceleration lanes will add to the safety, comfort and convenience of the public.

Service

In the past, controlled access highways, except turnpikes and certain parkways, have been limited to relatively short mileages in urbanized areas. Existing urban expressways in addition to being short are accessible to municipal and private enterprise facilities including police, fire department, ambulance, medical, fuel, repair, eating and overnight accommodations. Frequent entrance and exit points in built up areas make these services readily available. On the other hand, long distance controlled access highway systems currently on the drafting boards introduce a new public problem which merits attention.

Because it is not necessary to develop self-liquidating revenue from highway services on the Interstate and Urban Systems, existing private facilities can be utilized to the utmost. It would seem that national highway policy might well be based on the principle of disrupting existing private enterprise facilities and plant to the least extent possible. This can be done by informed planning during the design stage at the inception of each project. Thus the highway administrator has the option of developing policy in each state and region tailored to local needs and in the public interest. It is believed that proper perspective in assuming these new responsibilities would consider each motorist a "customer" to be served.

Utilization of existing services developed by private enterprise relieves the public highway agency of many annoying and detailed responsibilities. On the other hand, over-all leadership, coordination, supervision and regulation will be necessary to assure the safety, comfort and convenience of the motoring public.

In most cases it will only be necessary for the state to survey existing privately owned servicing facilities, coordinate, establish zones of operational responsibility and make satisfactory arrangements concerning prices charged, quality and scope of services. Thereafter, continued follow up and review will be desirable to assure adequate and satisfactory service to the public.

The magnitude of motorists' needs may be visualized when it is realized that the services required by a city of 200,000 population constitute daily requirements on a turnpike. These persons occupy an average of over 86,000 vehicles with peaks of 125,000 vehicles per day. This city on wheels is in motion but it must stop at intervals for essential services. All facilities of a modern city are required. Buildings, food, motor fuel, accessories, water supply, water treatment, commercial electric power, standby power, telephone, sewage treatment, garbage disposal, comfort facilities, radio, heating including standby units, air conditioning, lighting, parking, air and water must be available, all of which items are taken for granted by the city dweller.

A cardinal principle has emerged. The public are loath, in fact, will not leave a major highway in search of such facilities unless assured that acceptable services can be reached along a well maintained and marked route. Consequently, it becomes necessary to integrate these services into the over-all highway plan so the motorist may be offered complete service for his comfort, safety and convenience. Searching for service in strange territory, particularly at night with the probability of getting lost is distasteful to the public and not acceptable.

Fuel, oil, air, water, comfort and repair services *must* be available at reasonable intervals, and if the highway is of extended length, food facilities, wrecking, ambulance, first aid and "out of gas" roadside services are required if the motorist is to be served. Communications are more vital than ever. Many women, elderly and infirm persons drive motor cars, and servicing arrangements should be designed around the requirements of such people.

The handling of this problem calls for statesmanship of a high order in establishing policy, which will accord fully with the public interest; and in the development of procedures that will assure scrupulous honesty and impartiality in administration.

To insure the greatest economic benefit to the travelling public and the business community from the national system of Interstate Highways, operational planning for controlled access highways will revolve around existing privately owned and operated services, so that the construction of such highways will result in improved business and healthy land development.

Acquainting the motorist with the availability of roadside services as well as shopping or recreation facilities is equally as important as placing traffic warning and destination signs. Certainly dignified legible signs advising the traveller in advance the name of

(Continued on page 476)

Radio Controlled Traffic Counting

by Robert C. O'Connell
(Assoc. Mem., ITE)
Traffic and Planning Engineer
Wyoming Highway Department

COUNTING TRAFFIC by means of radio-controlled equipment has become a reality in Wyoming, and the results obtained so far from the first such installation in the United States promise a highly useful future for this method of obtaining traffic figures.

The single unit now being used experimentally by the Traffic and Planning Division of the Wyoming Highway Department has been in operation since June 13, 1956. Traffic recorded by this installation has an average daily volume of 1,700 vehicles. A check of the accuracy of the instrument shows less than one per cent error, with most of this error resulting from the poor method of detection. This kind of accuracy, plus the savings in maintenance costs which are anticipated from the installation, have given Wyoming's engineers good reason to believe that they have taken a long step toward the ultimate goal of efficient and inexpensive traffic counting. Preliminary engineering has already begun on a radar-type detector to improve the counter's accuracy still further.

One very real obstacle, however, to the full development of the radio-controlled method for expanded counting operations is the present lack of a proper radio frequency. Current use of the experimental civilian frequency of 27.255 megacycles for "mock up" work on the counter has already been proved unsatisfactory in several respects, and Wyoming's hoped-for extension of radio control to an ultimate coverage of the entire state has been stymied.

It was realized at the time the radio equipment was installed that the experimental frequency was not satisfactory and would be subject to many false impulses which might be picked up by the counter. This prediction became a matter of cold fact during January and February. Atmospheric conditions, consequent "skip" pickup, and so forth have played havoc with reception, and at times the recorder has chattered as though a parade were passing over the counter's magnetic detector.

Wyoming's experience to date with the first radio-controlled counter has been sufficiently encouraging for Highway Department engineers to suggest quite seriously that the effort be made to secure a new frequency band for the operation of traffic control devices and counting units, preferably in the newly opened frequencies of the 152-162 megacycles band. As they see it, the further use or perfection of all such equipment depends entirely upon the assignment of a practicable transmission frequency to the states for this kind of work.

Operation of Wyoming's radio-controlled counter can be briefly described. Its installation, three miles west of Cheyenne, replaced a conventional recording unit that had been located at the site for many years. The distance covered by radio transmission is about 4.5 miles, because the tone is received at the Radio Maintenance building in Cheyenne.

The radio counter unit itself is composed of a magnetic detector placed under the centerline of the roadway, with wires leading out to an amplifying unit and radio transmitter at the side of the road. (Figures 1 & 2). Impulses created by passing vehicles are received through the magnetic detector, amplified, coded into a tone, and transmitted to the Radio Maintenance building. Here the tone is decoded back to an impulse and relayed via a leased telephone circuit to the recording unit

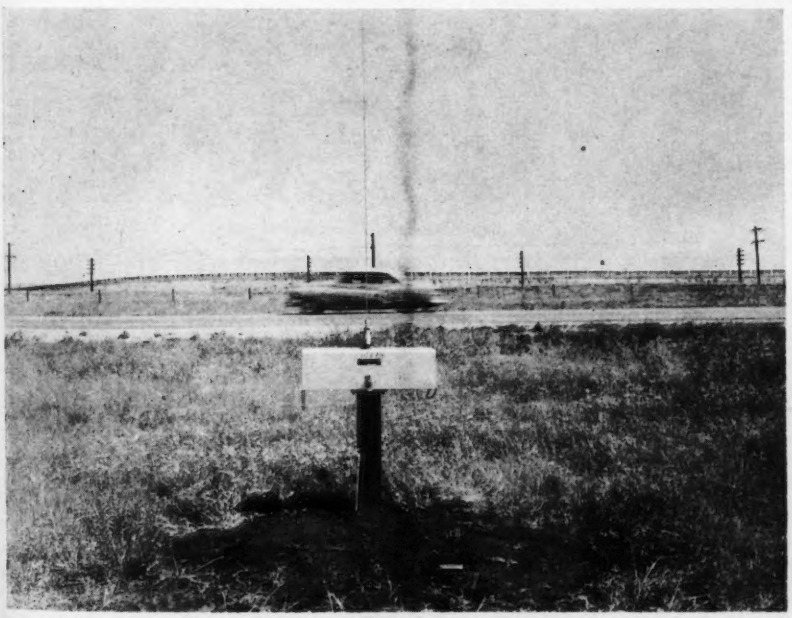

Figure 1
Field installation showing amplifier and transmitter housing.

installed at the headquarters of the Traffic and Planning Division in Cheyenne's State Office Building (Figure 3).

During eight months' continuous operation of the equipment, maintenance expense has been absolutely nothing, and this economy alone would be one obvious advantage in locating the recording unit or others like it at the headquarters office. It would no longer be necessary to replace tapes in the field or make other routine field repairs, and by eliminating the expense of sending a man out to a series of conventional recording units every week to pick up tapes, the use of radio-controlled units would effect a very respectable saving for the state.

Potentially, the use of radio-controlled counters on a state-wide basis could bring about great improvements in the accuracy and efficiency of Wyoming's traffic counting system, and therefore in the economy of its entire maintenance. At the present time there are 36 permanent traffic counters in operation throughout the state. Through utilization of the Highway Department's microwave communications system tones could be relayed from all of these counters into Cheyenne for recording, thus supplying a continual, hour-by-hour traffic count from each field installation. Such a procedure would enable the engineers to know whether a particular unit was counting traffic or not, so that any apparent difficulty could be remedied at once. Maintenance work could therefore be concentrated at the necessary points rather than dispersed all over the state for periodic inspection and repair. Furthermore, the accuracy and continuity of traffic counts would be improved because the Headquarters Office would know immediately the frequency and duration of any lapses in radio reception from each counter.

In the event of a national emergency, this system of traffic reporting could give an instantaneous picture of what is happening on all of the state's main highways. It is true that Wyoming is not plagued with traffic congestion, but it is also true that it has a great potential in this respect.

Wyoming knows it has something worthwhile in its experimental radio-controlled traffic counter — if the "sound barriers" of an inadequate and restricting radio frequency band can be broken through.

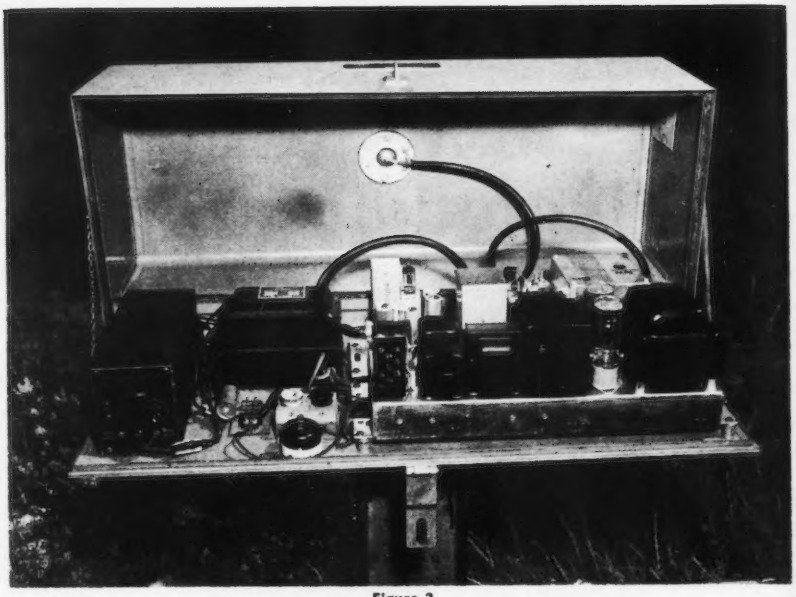

Figure 2
Amplifier and transmitter uncovered.

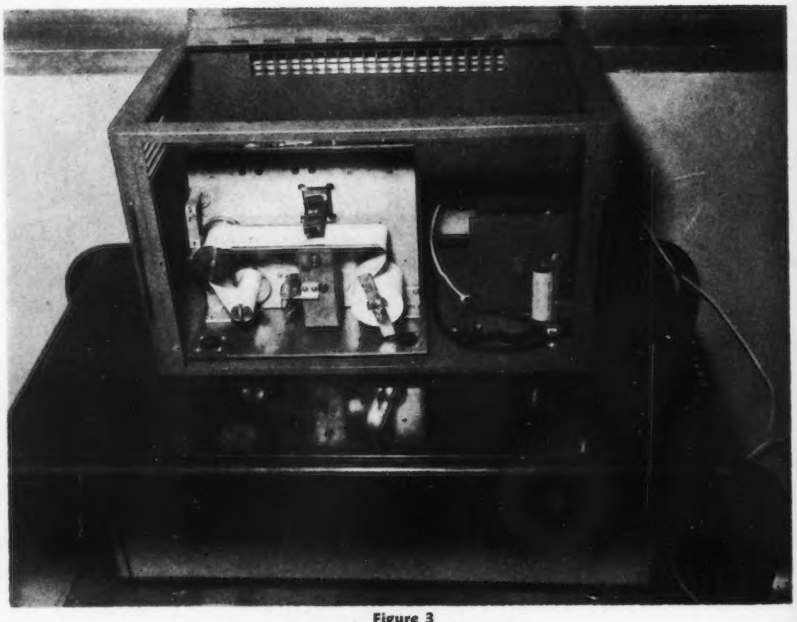

Figure 3
Recording unit at headquarters.

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By J. M. Bayley, B.C.E.
(Jun. Mem., ITE)
Traffic Engineer,
Melbourne City Council

MELBOURNE, the capital of Victoria, Australia is a city of 1,595,000 population and 700 square miles area in its metropolitan area. The total metropolitan area consists of approximately 42 autonomous self governing cities or bodies each being completely self contained within its own boundaries, levying its own taxes, building its own roads, collecting its own garbage, etc. Each individual area is quite clearly defined by law.

The City of Melbourne is one such self contained unit, and has a resident population of 91,800 people, however, its importance can be judged by the fact that even though its 13 square miles represent only 2 per cent of the total metropolitan area, it has about 16 per cent of the total valuation of the metropolitan area. It contains the Government buildings, Government House, and includes the bulk of the retail and commercial wealth of the State of Victoria.

The total number of cars registered in metropolitan Melbourne is 370,000; i.e., 1 vehicle to every 4.2 persons.

The core of the business district is approximately 1 mile by ½ mile representing 32 city blocks and is bounded on the south by the River Yarra and bridged by only 5 main bridges. To the west lies the vast railway yards, while to the east and north access is relatively easy.

Into the central business district each day pour approximately 250,000 people to work and shop (160,000 are the permanent worker population) and across the boundaries each 12 hours 120,000 cars proceed, 40-50 per cent of which come across the 5 major bridges.

The Melbourne City Council is governed by a body of 33 elected councillors headed by the Lord Mayor. The administrative head of the Council is the Town Clerk, whilst all the technical matters affecting roads and streets are under the control of the City Engineer, who reports directly to the controlling Committees (Figure 1).

Melbourne
The Central Business District from the air looking towards the east.

Council functions under a Committee system, in that there are 9 permanent Committees of Councillors in existence. These Committees discuss in detail, various projects and thence recommend them to full Council—so that the bulk of the detailed discussion and work is broken up into small Committee groups.

All traffic engineering in the city comes under the Traffic and Parking Committee which is "to have referred to it, the direction of all matters relating to the control and regulation of traffic and the parking of vehicles both on street, and in parking areas, metered spaces and streets and lanes generally."

The two broad sections under the Committee's control are the By-laws Department and the Traffic Engineering Branch of the City Engineer's Department. The By-laws Department is responsible for administering the by-laws of the city of which the bulk are concerned with traffic operations and parking. This 120-man branch is also responsible for enforcing and collecting parking fees in Council on-street and off-street areas; they enforce but do not collect parking meter fees (the latter being done by the City Treasurer's Department). In addition to the Council's By-laws Branch there exists the Victoria Police, a state-wide body which has over-riding control over the whole of Victoria and can, under its police powers, take control of any traffic situation. There are in effect two police forces in existence but the Council's is limited to the Melbourne city area and the bulk of their work is concerned with parking control, parking meters, etc., and not with traffic control.

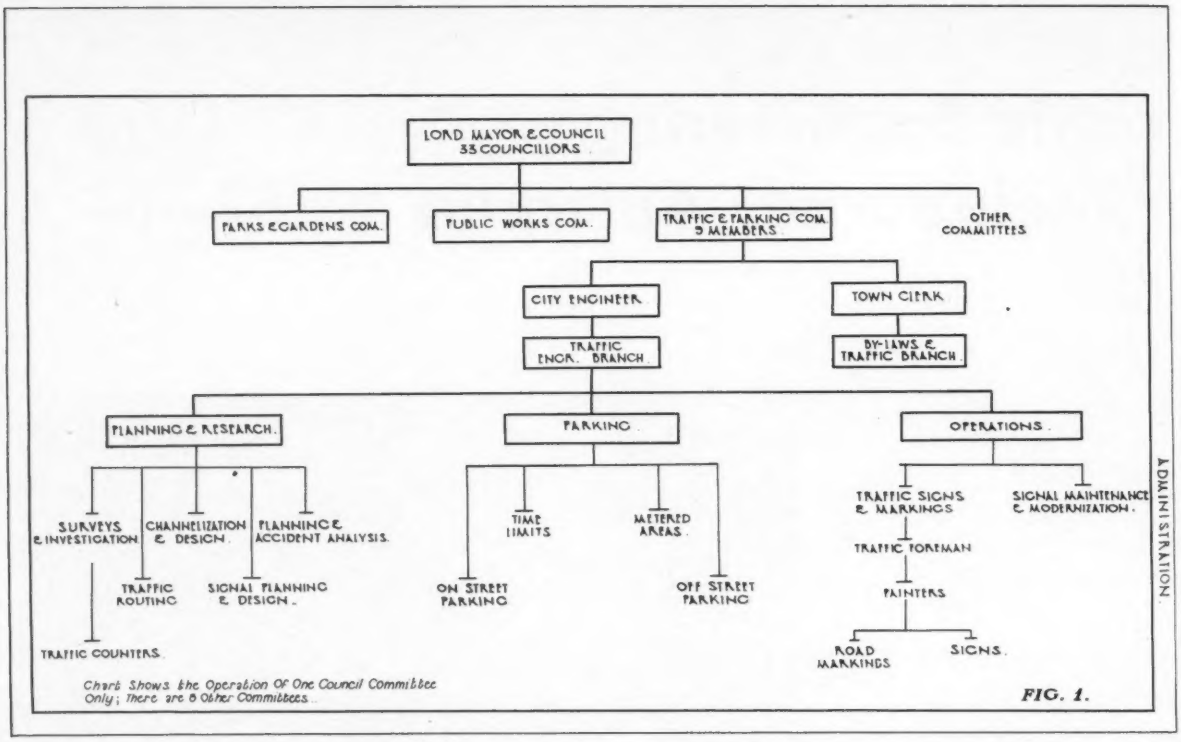


FIG. 1.

The other wing of the Traffic and Parking Committee is the Traffic Engineering Branch of the City Engineer's Department.

The City Engineer is head of a number of city operations, viz., civil engineering design, cleansing, surveying, garbage disposal, mechanical engineering, street maintenance and traffic engineering, and as head the Traffic Engineer is directly responsible to him and thence to Traffic and Parking Committee.

The present City Engineer is Mr. J. W. Knee, a graduate of the Yale Bureau of Highway Traffic.

Prior to 1954, the Traffic and Parking Committee did not exist as such, and no defined traffic engineering branch existed, the functions of traffic engineering being carried out by several city departments, e.g. City Architect's, City Electrical Engineer, City Engineer, and Chief By-laws and Prosecuting Officer acting in more or less co-ordinated fashion.

In June, 1954, the Council created a Traffic Engineering Branch within the framework of the existing City Engineer's Office.

Specifically the Council resolutions dealt with the following defined functions:—

1. *Planning.*

Prepare city traffic plan designating arterial, major, secondary and other roads.

Study need for, and schedule improvements.

2. *Traffic Surveys and Studies.*

Plan, execute and analyse traffic studies, such as travel habits, origin and destination, traffic volume, cordon counts, speed, speed and delay, accident analysis, kerb parking, off-street parking, and parking meters.

3. *Design.*

Check operational aspects of constructional plans, re-design intersections, determine need for and design channelization, roundings and roundabouts, etc.

4. *Traffic Signals.*

Determine need for and design, time, co-ordinate, install and maintain traffic signals and other electrical control devices (with the assistance of and in collaboration with the City Electrical Engineer & Manager, Electric Supply Department).

5. *Traffic Signs and Markings.*

Develop standards and specifications, design, install and maintain traffic signs and road markings which regulate, warn and guide traffic (in collaboration with Traffic Police and Chief By-laws & Prosecuting Officer).

In August, 1955, the organisation consisted of a staff of six—two engineers, one foreman painter and three painters. For transport, only one utility was available (this being borrowed from other Departments).

At the present time the organisation stands at 34 members. The 34 are comprised of 4 Engineers, 5 Draughtsmen, 1 Traffic Foreman, 2 Signal Mechanics, 6 Traffic Counters, 14 Painters and 2 Cleaners.

The Branch now possesses four vehicles (full time) three of which are radio equipped so that speedy communication and liaison can be carried out between the base and field staff.

The first years of operation have been mainly formative, time has been spent on building up an establishment, collecting data and endeavouring to establish traffic engineering as an acknowledged part of city government and to sell to the public what traffic engineering can do for the city generally.

Traffic Surveys

The planning and research section has been responsible for the gathering together of basic and essential information on traffic movement in the city streets to be used by other sections of the Branch. In addition the information obtained must be kept up to date. Prior to 1954 traffic facts in the city were virtually non-existent and no determined attempt had been made to

collect any. During the past year, 6 permanent traffic counters have been added to the staff, equipped with numerous hand tally counters and four mechanical counters. Continuous work is now being carried out during the year on collecting facts.

During the year some 390 studies have been carried out, these include manual and automatic vehicular counts, classified vehicle counts, speed checks, lane usage, signal observance counts, pedestrian crossing counts, parking checks, before and after studies and miscellaneous transit loading zones, streetcar passengers, safety zones, etc. Also during the 12 month period two extensive parking surveys were conducted in the central business district using 40 men loaned from local business houses.

The Branch has now begun a programme of research to determine a number of basic facts for use in the design of new facilities. Such data as pedestrian capacities of sidewalks, reaction times, lane discharge capacities, warrants for traffic signals, pedestrian and school crossings, pedestrian walking rates, car occupancies, parking bay sizes etc., are sadly lacking and will need to be determined for local conditions. At the present time U. S. figures are used, but these do not give a true basis for Australian conditions and it is hoped that within a year a set of basic data will be available for use. A Manual, covering signs, maintenance periods for painting, lines, etc., has been prepared for Branch use.

Signs

Over the years a hotchpotch of signs has been erected in the city and the principle of reflectorization did not exist, so that an immediate programme of sign modernization was introduced and is now well under way. A series of standards have been developed using the U. S. system for parking and no parking signs (i.e. green or red on white), the diamond black on yellow for warning signs, with the regulatory signs yellow on black circular. With these as the basis of operations, all non standard signs have been, or are being removed and replaced with standard signs or some other form of device.

All signs with any night time significance are being reflectorized with suitable material — scotchlite completely, or a plain background with black scotchlite legend. All signs, except the reflectorized blanks are totally manufactured in the City Engineer's Workshops and in twelve months 2,000 signs were made and 220 purchased; during this time the painting staff increased from 4 to 15. It is planned that a "vacuum applicator" will be purchased in the next financial year to cope with the volume of the work. During the year 3,000 gallons of paint were used on lanes, centre lines etc., and in addition a self-propelling lane-marking machine is due to go into service in the near future to mark a large number of our busy streets which are now almost totally devoid of markings. Lane marking up to the present time is almost totally lacking and an extensive programme is envisaged to lane-mark 20 miles of streets and hence educate the public as to their use and operation.

The red reflectorized Stop sign and black or yellow Yield sign were used for the first time early in the year.

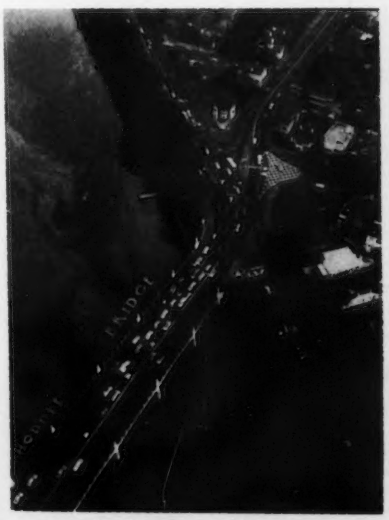
Signals

The signal system of the City of Melbourne consists of 67 installations predominantly of the electronic vehicle-actuated type, although only 3 intersections are actually working as vehicle-actuated signals. Only three of the 67 installations are of the synchronous motor type and these are of an antiquated local manufacture. Much criticism has been expressed regarding signals over the years due largely to their inefficient operation and the sometimes political nature of their installation, so that an immediate program was instituted to educate the public to what a signal can do, and generally to raise the standard of the signal system operation to more closely cater for the traffic flows. Previous to 1954, all signals were maintained on contract; now all maintenance has been taken over by the Branch mechanics who also handle all bulk replacement of lamps and new modifications where required. They are equipped with a panel van and are in two-way radio contact with the Traffic Engineer and City Engineer's Office.

Ten intersections in the main street have been linked to provide a progression of 23 miles per hour from one end of the street to the other. During the peaks, when all turns and parking are banned and by employing the early "cut-off" principle, only sufficient traffic is allowed into the system that can get right through the whole length of the street; in this way the peak flow through the street was increased from 1,300 to 1,500 vehicles per hour through two 9 feet lanes. The traffic is organized into compact "platoons," and the key light of the system at the end of the street allows only 40 vehicles through per cycle, whereas the opposite direction has a larger green clearing period—the reverse applies at the other end of the street.

Modernization of the existing signals is proceeding at the present time with the installation of the flashing amber facility in the 67 installations —these operate at pre-determined off-peak periods so that the minimum of delays occur to traffic. At one intersection lagging green was introduced to cater for a very heavy right turn (U.S. left) and, in conjunction with the introduction of the "diamond turn," this has had the effect of reducing delays at the intersection to almost nil. At all new signal installations at least 3 plans of operation plus flashing amber is being used, as well as leading or lagging greens where required.

At another intersection, in conjunction with "islands" the signals were converted from a cumbersome three phase system to a two phase system with two plans involving a leading green in the morning and lagging green in the morning and evening peak. The volume of traffic now taken by the intersection has shown a 50 per cent increase up to 3,900 vehicles at the a.m. peak. One direction of flow



Hoddle Bridge Intersection
During trial period when temporary barriers were erected and large islands painted on road.

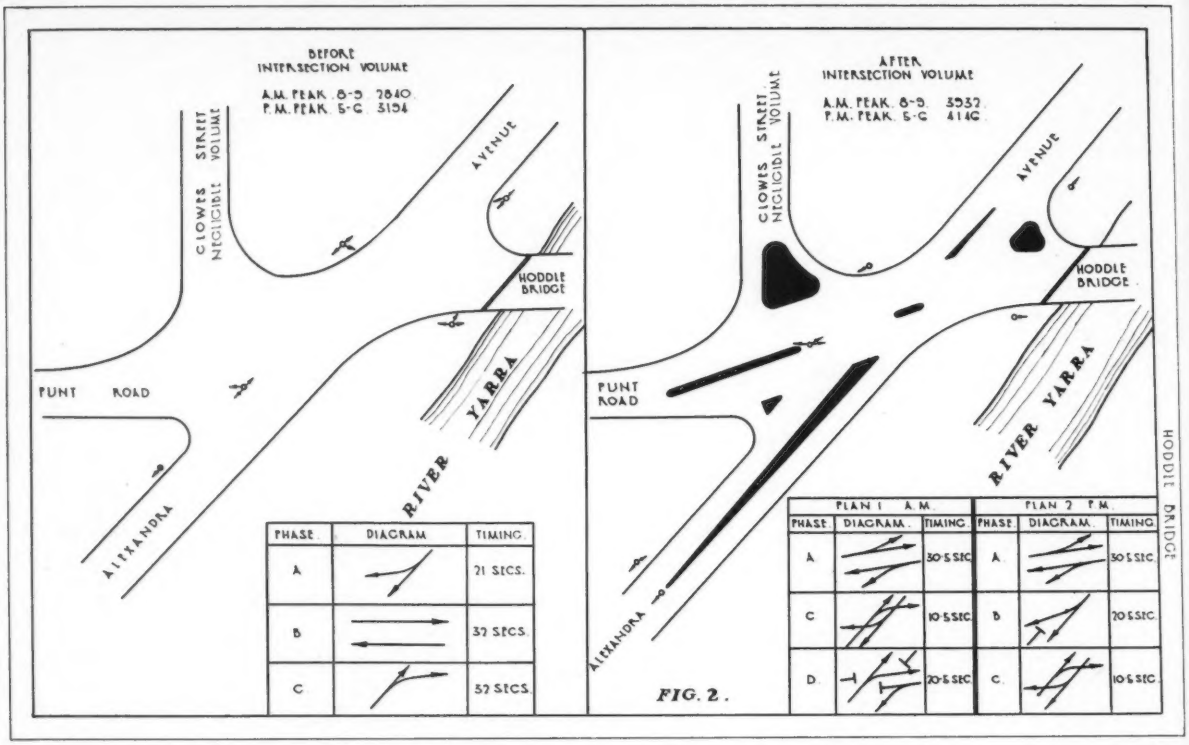


FIG. 2.

actually increased from 1,000 to 2,000 vehicles.

Under this scheme, (Figure 2, Hoddle Bridge), use was made of the large open intersection, and by suitably timing the lights the heavy inbound flow is catered for in the morning and the outbound flow in the evening.

Previous to the new system the cycle was divided into 3 phases, 21, 32, 32 second divisions. The plans now operating are two, plus a flashing amber unit.

Two other intersections were linked, channelized and overhead lane lights were employed for the first time in Australia (other than on bridges). As indicated by Figure 3 (Brunton Avenue), continuous movements are permitted whilst others work on a fixed time cycle, this being achieved by over-

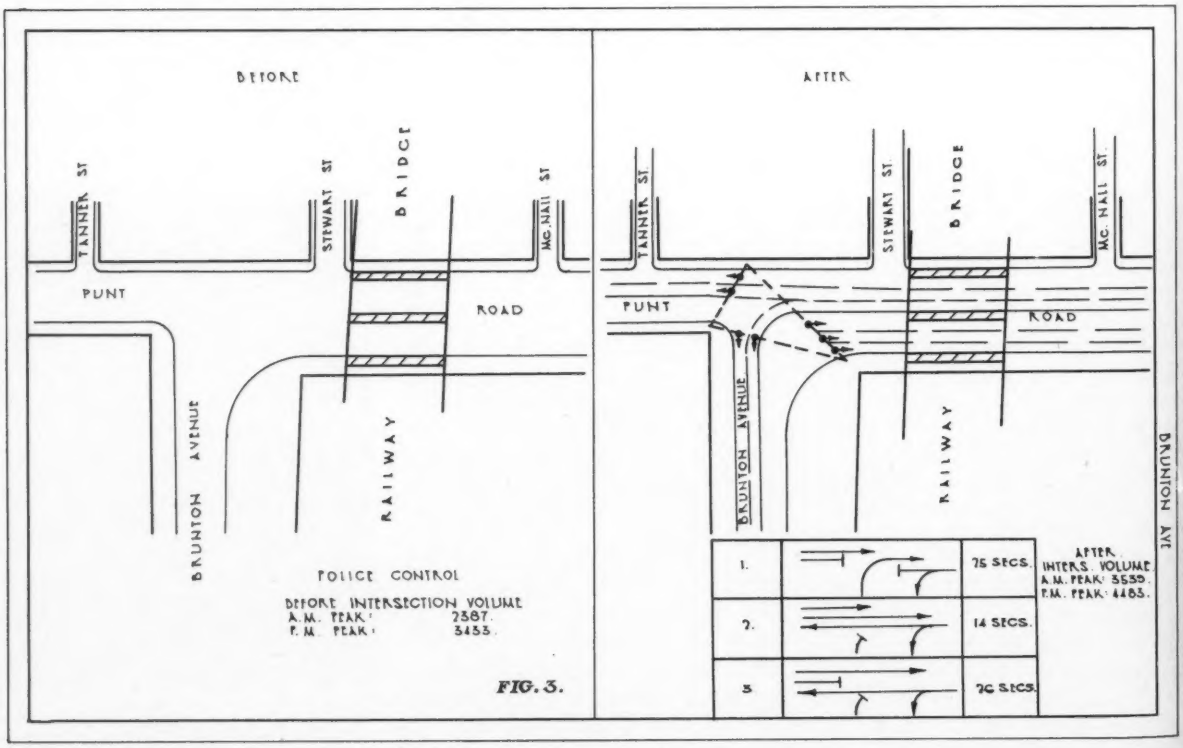


FIG. 3.

Overhead Lane Lights
Brunton Avenue complete with site boards. These were subsequently removed owing to large wind resistance.

head lane lights and road markings. The total traffic through the intersections has increased 39 per cent and delays cut from 15 minutes down to 5 minutes. Total traffic through Punt Road-Swan Street is now 5,000 vehicles in the peak hour (Figure 4).

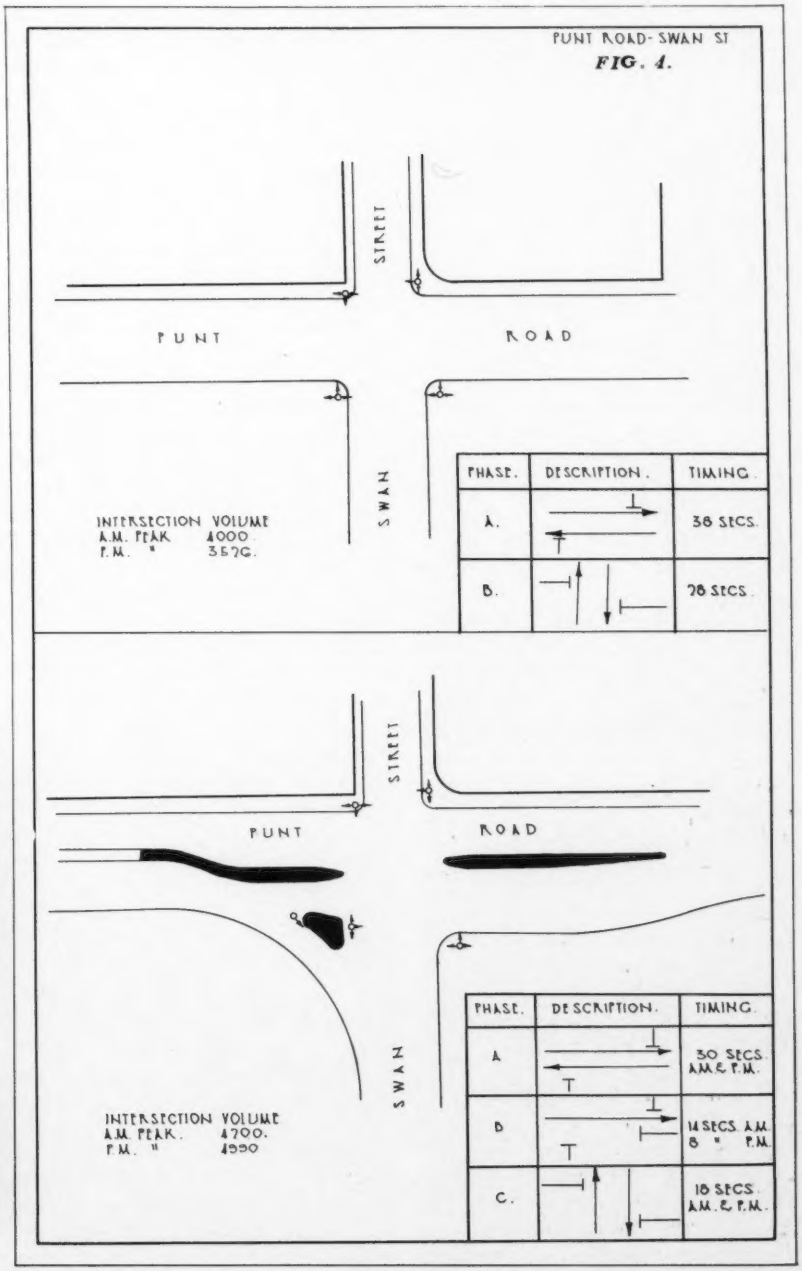
Also during the year Melbourne was introduced to the principle of pedestrian "Walk-Wait" lights. "Walk-Wait" lights were installed at four major city intersections where both pedestrian and vehicular volumes are extremely heavy. Using a modified form of traffic signal, a great deal of success has been achieved in clearing the intersection of stragglers so that when the vehicular green commences the vehicles are unimpeded by pedestrians. The pedestrian "walk" comes up simultaneously with the vehicular green and the "wait" 10 seconds prior to the vehicular amber and thence red signal. A contract has now been called for a new design of "Walk-Wait" units to replace those dual units now in existence.

In the latter part of the year after much discussion, the scramble system

Swan Street — Punt Road Intersection
Note lane lines and widened channelized intersection.

was introduced at a T-intersection. Since Melbourne streets are mostly 99 feet wide, the scramble system is not practical due to pedestrian diagonal crossing time, but at this particular intersection (being virtually a "dead end") one street carries only a light traffic volume. Opening into the intersection on the southern side is the main suburban railway station, the result being heavy pedestrian volumes (a.m. hourly peak 13,500) conflicting with heavy vehicular volumes (1,600 peak flow). Prior to the system, signals were of fixed time operating on normal 2 cycle phase of 30-4-20-4 seconds. The new system incorporated a 3 cycle phase, one of which is exclusive for pedestrian movement whilst vehicles are held in each direction—the pedestrian phase being 20 sec. plus a 10 sec. clearing period.

The specially designed "Walk-Don't Walk" lights were totally manufactured by the Branch. Extensive "before and after" studies of vehicular volumes, pedestrian volumes, pedestrian-vehicle conflict and vehicular in-



tersection time has shown an all round improvement at the intersection. Vehicular volumes are up from 5 to 11 per cent even though green time is cut from 23-42 per cent. Pedestrian volumes increased from between 6-16 per cent. Number of pedestrians actually on the road when vehicle green commenced reduced to from between 23-60 per cent and vehicle crossing time has been substantially reduced. Even though this system is a radical departure from our standard way of street crossing, the idea has been excellently received, public, press, and police alike.

Flashing red lights have been introduced at a few isolated intersections to mean stop and proceed with caution. After operating as a trial for some months there seems every likelihood that they will be adopted by the Government as a legal traffic control device. To speed up traffic, the signal light sequence has been altered to give a preceding amber (or red amber simultaneously) — this has had the effect of cutting down the getaway time by two-thirds and thereby greatly increasing the capacity of signalized intersections.

In addition to the overall signal programmes numerous smaller problems have been tackled including removal of old neon "Danger Signs" and replacement with flashing amber, relocating of lantern units, etc.

Late in 1956 two engineers were sent to the U. S. to study the operation and design of a radio controlled (with television supervision) signal network, with particular regard to its application within the City of Melbourne. The City proposes within the next two years to install over 100 signal installations and the most suitable method of linking is of vital concern, particularly the financial aspect.

Channelization

Eight major channelization schemes have been installed during the past year and plans are being prepared for a further 10-15 "problem" intersections during the next year. At most of the eight installed, the problem was mainly one of accidents and wide intersections where vehicle movements were uncontrolled and performed haphazard and dangerous manoeuvres. The islands formed two functions—one to prevent accidents and the other to form an orderly flow of traffic. At three the problem was basically capacity

Diamond Turn
Lane markings at a simple signalized intersection. No streetcars.

and delays. In one, a pair of streets were converted to one-way operation and a set of lights removed. This has had the effect of greatly increasing the average speed both in and out of the city (from 16.1 to 21.1 m.p.h.) and reducing delays from an average of 23 seconds previously to 3½ seconds. At another, the intersection was widened to provide a greater storage capacity and at the same time provide both right and left hand turning lanes. The actual volume of traffic through the intersection has increased by 5 per cent in the morning and by 39 per cent in the evening (Figure 4).

Markings and Devices

Two of the most spectacular and yet basically simple concepts introduced were the "off centre" lane movement and the "diamond" turn.

On a four lane outlet (and inlet) to the city studies showed that delays up to 15 minutes occurred at both peaks, in addition the volumes were almost three to one in the major direction, the reverse applying at the other peak. By means of traffic cones and parking bans, off-centre lane movement was obtained, this has cut the delays to nil at both morning and evening peaks. A programme is planned for other such off centre movements following this outstanding success. The cones will be progressively replaced by overhead lane lights. This idea has been such a resounding success that the public is asking for more.

It has been the practice in Melbourne to have centre of the road traffic buttons, thereby forcing all vehicles executing the right turn to manoeuvre around the button—in the case of near equal turning movements this turn is self locking and cases have been known where the green time in the opposing direction has lost up to 75 per cent of its time due to vehicles sorting themselves. By the simple expedient of moving the traffic button back to the building line, cars could legally execute an inside turn—the success of this device was instant, so that it is becoming increasingly popular to see the "diamond" markings on the road throughout the Melbourne Metropolitan area.

More and more streets are being lane marked to give more guides to the motorist and a large lane marking machine has recently been purchased.

During the year, fifty pedestrian and school crossings were installed after factual study had shown that they were justified, and also erected were 400 ft. of chains to keep pedestrians to defined paths and cut down accidents. At one particularly hazardous location "jiggle" bars have been used to "jolt" the motorists into realizing the danger.

Several suggestions for one way streets were considered during the year, but the introduction of such schemes is complicated in that Melbourne has an extensive streetcar system and nearly every scheme has to be designed with the fixed rail transport in mind.

Parking

Parking, as is expected is one of the city's major problems and continuous parking surveys are being undertaken to keep abreast with the problem. Each year a complete study is conducted of the central business district using men provided by the businessmen's association—these surveys form the basis for the meter and off-street parking programme including loading zones, taxi stands, parking bans, etc.

In September, 1956, the parking survey showed that in 12 hours 55,000 vehicles parked within the half square mile of central business district. This represented a 20 per cent increase on the 1954 figure and the turnover had increased from 7½ to 9 1/5 in 12 hours — this increase has been mainly due to the parking meter and improved enforcement generally. The city has now 1,500 parking meters on the streets ranging in time limits from 20 minutes to 2 hours and over the next 2 years we plan to install a further 7,500 including a large proportion of all day meters.

The Council recognizes the necessity for off-street parking so at the moment is purchasing a site for use as an off-street parking garage, to be let to private enterprise for development. In addition the question of zoning ordi-

(Continued on page 490)

Use of Pedestrian Delay in "Walk-Wait" Signals

by James C. Ray
(Jun. Mem., ITE)
Traffic Engineer,
City of Santa Ana, California

THE CITY OF SANTA ANA has installed new pedestrian signals at the intersection of Fourth and Main Streets. The previous traffic signals were standard two phase operation. The new installation of pedestrian "Walk - Wait" signals are specially timed to permit traffic to make right turns prior to the pedestrian movement. The signals are controlled by a single dial G. E. Type "F" controller.

The equipment was installed by city forces under the direction of Leo Clever, Signal and Street Lighting Foreman. The total cost of the installation, which included pedestrian signal faces, new cable, servicing the controller and labor charges, was $1,798.56. Figures 1 and 2 show the new installation.

The intersection is at the center of the downtown area. Main Street is 46 feet wide and Fourth Street is 54 feet wide between curbs. The average pedestrian volume during the peak traffic hour is 1,000 pedestrians on the heaviest traveled crosswalks. Both streets have parallel parking. Fourth Street is striped for four lanes of traffic. Main Street is striped for four lanes at the intersection; but due to the narrow width the inside lane is used only about 10 per cent of the time.

The operation of the signals before and after the new installation is shown in Figures 3 and 4. Shown is a typical example of a group of pedestrians crossing the street and delaying a single right turning vehicle, which in turn delays the following vehicles. Figures 5 and 6 illustrate the delay phase of the "Walk-Wait" signals, which permits the right turn to be made before the pedestrian begins to cross the street. Note in Figure 6 that the second vehicle makes the right turn with ease; and in Figure 5 the first vehicle turns right and clears the intersection behind it. In Figure 4 note that the pedestrian coming from the opposite side of the street also will delay the first vehicle. At times of heavy pedestrian traffic as few as 1 or 2 vehicles could clear the intersection from the right hand lane. Typical examples of the fixed time cycle before and after the installation of pedestrian signals are shown in Tables I and II.

Figure 1

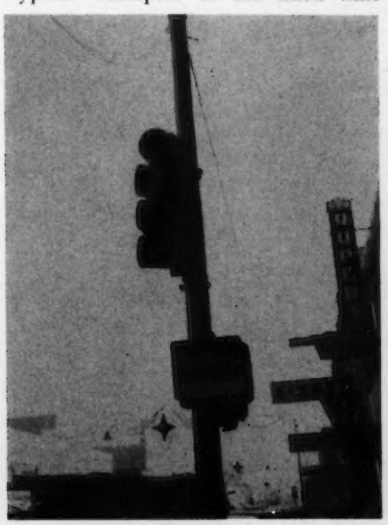


Figure 2

Figure 3

Figure 4

Figure 5

Table I
Before Installation of Pedestrian Signals.

Main Street Vehs. & Peds.	Fourth Street Vehs. & Peds.	60 sec. Cycle
G	R	45% (27 sec.)
A	R	5% (3 sec.)
R	G	45% (27 sec.)
R	A	5% (3 sec.)

Table II
After Installation of Pedestrian Signals.

Main Street				Fourth Street			
Vehicles	Peds.	%	Sec.	Vehicles	Peds.	%	Sec.
G*	Wait	16	9.6	R	Wait		
G	Walk	17	10.2	R	Wait		
G	Wait	17	10.2	R	Wait	55	33.0
A	Wait	5	3.0	R	Wait		
R	Wait			G*	Wait	14	8.4
R	Wait	45	27.0	G	Walk	13	7.8
R	Wait			G	Wait	13	7.8
R	Wait			A	Wait	5	3.0
Total Cycle		100	60.0			100	60.0

The two periods marked with an asterisk (*) are the leading green periods when traffic may proceed and pedestrians are delayed. Sufficient time is allowed for two and sometimes three vehicles to make the right turn.

A delay study was made by the sampling method [1] during each of the above type operations. The following results were obtained with the intersection running at possible capacity on Main Street and less than practical capacity on Fourth Street.

Before Study

Time of Survey:
5:00 P. M. to 6:00 P.M.,
August 10, 1956.
Main Street—
Volume 249 vehicles (½ hour)
Average time of delay per vehicle 49.9 seconds
Per cent of vehicles stopped at intersection 100.0%
Fourth Street—
Volume 224 vehicles (½ hour)
Average time of delay per vehicle 37.2 seconds
Per cent of vehicles stopped at intersection 75%

The signals were installed on October 11, 1956. A period of six weeks was allowed after the installation of the new signals for traffic to acclimate to the new conditions. The following results were obtained with the intersection running at practical capacity on Main Street and less than practical capacity on Fourth Street.

(1)—See Berry, D. S. & Vantil, C. J., "A Comparison of Three Methods for Measuring Delay at Intersections", Proceedings—California Street & Highway Conference 1954.

After Study

Time of Survey:
5:00 P.M. to 6:00 P.M.,
November 23, 1956.
Main Street—
Volume 217 (½ hour)
Average time of delay per vehicle 27.8 seconds
Per cent of vehicles stopped at intersection 74.7%
Fourth Street—
Volume 197 (½ hour)
Average time of delay per vehicle 31.4 seconds
Per cent of vehicles stopped at intersection 75.8%

The delay study showed a decrease of 22.1 seconds (44%) in the average delay of each vehicle on Main Street and a decrease of 5.8 seconds (15.6%) on Fourth Street.

The traffic volume was somewhat lighter in the "after-study" but Main Street was running over practical capacity on both occasions. The number of cars stopped at the intersection on Main Street decreased significantly. This may have been a function of the lighter traffic volume as well as the decrease in delay. Fourth Street showed no change in this factor.

Figure 6

It appears that the large reduction in delay was definitely due to the new signals. The improved operation, both in facilitating right turns and clearing pedestrians at the end of the green, is a success. Plans are forthcoming to install similar timing cycles at other intersections with heavy pedestrian traffic.

Public reaction to the system has been varied. The average driver has expressed a feeling that the intersection is definitely improved. The average pedestrian feels that he is forced to "wait" longer than necessary. The short time of 8.4 or 9.6 seconds seems much longer than it really is to the pedestrian.

Traffic counts show that there are about as many pedestrians as drivers at the intersection (with the exception of 2 to 3 weeks before Christmas, when right turns are prohibited at all peak hours). Thus it appears justified to favor the driver over the pedestrian in reducing delay.

One improvement which would aid public relations would be installation of a second dial to reduce the "Wait" period to a minimum during low pedestrian volume hours.

Excellent observation of the pedestrian right-of-way by drivers has precluded the possibility of any accidents. None has been reported at the intersection in the three months since installation.

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September 23-26, 1957
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27th Annual Meeting, ITE

Traffic News

Winners in AAA Pedestrian Record and Program Announced

Connecticut, Detroit and Statesville (North Carolina) were named grand award winners in the American Automobile Association's 18th Annual Pedestrian Program. These winners and others were selected by a Board of Judges in Washington late in May.

Other states winning first place awards were Minnesota, Wyoming and Oregon. Cities over 50,000 population winning first place awards in addition to Detroit were Cincinnati, Washington, Rochester (N. Y.), Tulsa, Roanoke and Pontiac.

First place in the 25,000 to 50,000 population group went to Enid, Oklahoma. Statesville won in the 10,000 to 25,000 population group, and first place in the under 10,000 group was shared by Winter Park, Fla., Easton, Md., and Sand Springs, Okla.

Computer Course Scheduled for August At Northwestern

A two-week course, "Applications of Computers to Highway and Traffic Engineering," has been scheduled at Northwestern University from August 19 to 31. The course is jointly sponsored by the Transportation Center at Northwestern and the Institute of Transportation and Traffic Engineering, University of California.

Recent work by a number of research agencies has clearly designated the value of computers in solving traffic flow problems. This two-week course is presented to familiarize traffic engineers and other traffic technicians with the basic operation of computers and the methods and procedures of traffic simulation.

Instruction will consist of lectures, demonstrations, laboratory periods, inspection trips, consultation periods and outside reading and problem assignments. A degree in engineering or one of the physical sciences is a prerequisite for admission. A tuition fee of $100 is to be charged, and housing and meals will be provided in university facilities at a total cost of $115.

Inquiries should be addressed to Dr. John E. McGrath, Assistant Director of Education, The Transportation Center at Northwestern University, 1818 Hinman Avenue, Evanston, Illinois.

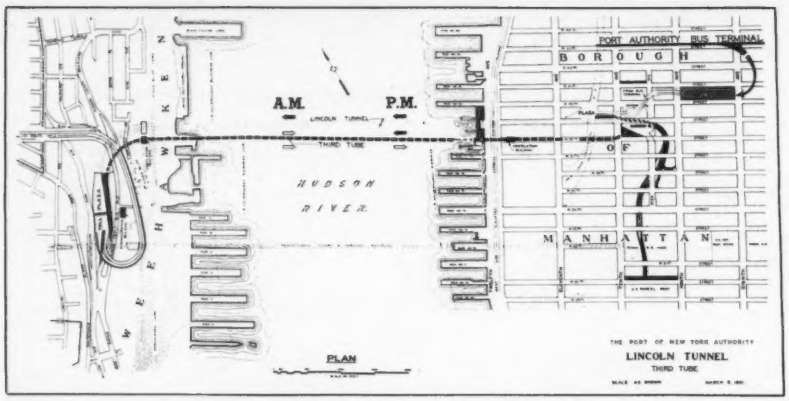
A new use for parking meters was found in Miami, Florida, when a popular restaurant set the meters on the dining tables to solicit funds for the Variety Children's Hospital. Patrons of the establishment were highly interested and amused by the novelty. They enjoyed placing coins in the meters and then watching the time run out. The funds collected were used to supply the hospital with medical, therapeutic and recreational equipment for the children. The meters were donated by the Duncan Parking Meter Corporation through the efforts of Mr. George H. Kunde, City of Miami Traffic Engineer and Off-Street Parking Department Director. From left to right in the attached photograph: D. J. Reynolds, Public Transportation Supervisor, City of Miami; Maurey L. Ashmann, member of the Off-Street Parking Board of Miami; George H. Kunde, Traffic Engineer and Director of the Department of Off-Street Parking; shown with restaurant proprietor and chef.

Increasing Productivity Conference Scheduled For Boston in September

A fourth in the series of National Conferences on "Increasing Highway Engineering Productivity" will be held at the Somerset Hotel in Boston, Massachusetts, on September 17-18-19, 1957. The conference will be sponsored jointly by the American Association of State Highway Officials, the Association of Highway Officials of the North Atlantic States, the Massachusetts Department of Public Works, the Massachusetts Institute of Technology, and the U. S. Bureau of Public Roads. (The previous three conferences were held in Chicago, Illinois; Atlanta, Georgia; and Los Angeles, California.)

All engineers, officials, engineering consultants, university affiliates, associations, and engineering correspondents interested in the development of improved productivity in the field of highways and other closely allied civil engineering fields are invited to attend. The agenda for the conference includes applications of electronic computation for engineering purposes, photogrammetry, and other timesaving highway engineering methods, procedures and devices that have been developed since the recent Los Angeles meeting on this subject.

The American Road Builders' Association and other industry and highway engineering groups are also supporting the meeting. The major manufacturers of electronic computers and other highway engineering tools and devices will demonstrate the highway engineering applications of their equipment. The Massachusetts Institute of Technology under a cooperative project with the Massachusetts Department of Public Works will demonstrate at a session to be held at the Institute the latest developments in the application of aerial photography and photogrammetry to highway engineering.



Lincoln Tunnel Third Tube Opened to Public

The third tube of the Lincoln Tunnel under the Hudson River between New York and New Jersey was opened to traffic on May 25. The $100,000,000 project will increase the traffic capacity of the Lincoln Tunnel by 50 per cent. In 1956, with two tubes operating, the tunnel handled a record total of 21,600,000 vehicles.

The new two-lane tube, which will be known as the South Tube, will be operated in an eastbound direction (toward New York), and the North Tube westbound (toward New Jersey). The center tube will be operated in any of three ways, according to traffic requirements: (1) both lanes eastbound; (2) both lanes westbound; and (3) one lane in each direction. New over-lane signals in all three tubes permit a flexible operation and quick change-over from one pattern to another.

The third tube is similar in design to the existing two tubes of the Lincoln Tunnel. The major differences between the new tube and the older ones are three miles of fluorescent tubing in place of incandescent lights and the use of asphaltic concrete for the roadway surface instead of brick.

C. C. Wiley Award Named

The third C. C. Wiley traveling award in highway engineering has been presented to Norman C. Roden of Crystal Lake, Illinois, and a student at the University of Illinois.

The Wiley scholarship, which honors Professor C. C. Wiley, Honorary Member of the Institute of Traffic Engineers and nationally recognized highway engineer, retired in 1952, provides $1200 for summer travel to visit highway departments and projects. Roden will write a report on his travels and make photographs, all of which will become the property of the university and will be used for instruction purposes. He plans to travel extensively, covering the United States and Canada from New Orleans to the Mackinac Straits Bridge and the St. Lawrence seaway.

Training Opportunities

August 19-31—APPLICATION OF COMPUTERS TO HIGHWAY & TRAFFIC ENGINEERING— Sponsored by Northwestern University Transportation Center and the Institute of Transportation and Traffic Engineering, University of California. For engineering or physical science graduates. At Evanston, Illinois. Tuition $150. For information, address: Dr. John E. McGrath, Transportation Center, Northwestern University, 1818 Hinman Ave., Evanston, Ill.

September 9-14 — HIGHWAY EXECUTIVE DEVELOPMENT CONFERENCE— Sponsored jointly by AASHO and the National Highway Users Conference. By invitation only. At University of Wyoming, Laramie. For information, address: Mr. Roy E. Jorgensen, National Highway Users Conference, 966 National Press Bldg., Washington 4, D.C.

September 17-19—NATIONAL CONFERENCE ON INCREASING HIGHWAY ENGINEERING PRODUCTIVITY (4th of a series)— Sponsored by AASHO, Association of Highway Officials of the North Atlantic States, Massachusetts Department of Public Works, M.I.T., and U. S. Bureau of Public Roads. All engineers, officials, consultants and others interested. At Somerset Hotel, Boston, Mass. For information, address: Mr. H. A. Radzikowski, U. S. Bureau of Public Roads, Washington 25, D.C.

September 23-27 — HIGHWAY MANAGEMENT TRAINING COURSE— Sponsored by AASHO and the National Highway Users Conference. For highway engineers with some administrative experience who might be expected to devote some time to management training in their own departments. By invitation to the department only. At Cornell University, Ithaca, N. Y. For information, address: Mr. Roy E. Jorgensen, National Highway Users Conference, 966 National Press Bldg., Washington 4, D.C.

New Appointments

Woodling Given New Broader Authority In Akron

Herbert B. Woodling (Mem., ITE), has been given new and broad authority over traffic engineering in Akron.

Although his title has been "traffic engineer" for some time, the position has been more an advisory one than one with line authority. This was changed, however, by action of the mayor when he issued an executive order making Woodling engineer in fact as well as name.

Herbert B. Woodling

Responsibility for traffic had been divided among the traffic engineer, the highway engineer and the signal division, planning, the police, and the city council. The Mayor had a voice as safety director, and the Mayor's Traffic Committee acted in an advisory capacity. Now all of these divisions have been made subject to the authority of Woodling, who reports directly to the Mayor.

In commenting on the change, the *Akron Beacon Journal* said:

"Placing Akron traffic under a single top authority is an important, forward step in moving traffic more efficiently and more safely. Mayor Berg should be complimented for taking this action.

"Herb Woodling has a gigantic task ahead of him. We wish him all success as Akron's top traffic authority."

Young Leaves California For Eastern Consulting Firm

J. C. Young (Mem., ITE) has been named Chief Highway Engineer for the firm of Porter, Urquhart, McCreary & O'Brien, consulting engineers in Newark, New Jersey.

Young, known to many Institute members as Jake, retired recently after 29 years with the California Division of Highways. A civil engineering graduate of the University of California, he joined the California Department in 1928 and served in various capacities until 1947 when he became traffic engineer. Later, he became engineer of

J. C. Young

design for the California Department, which was the position he held when he retired.

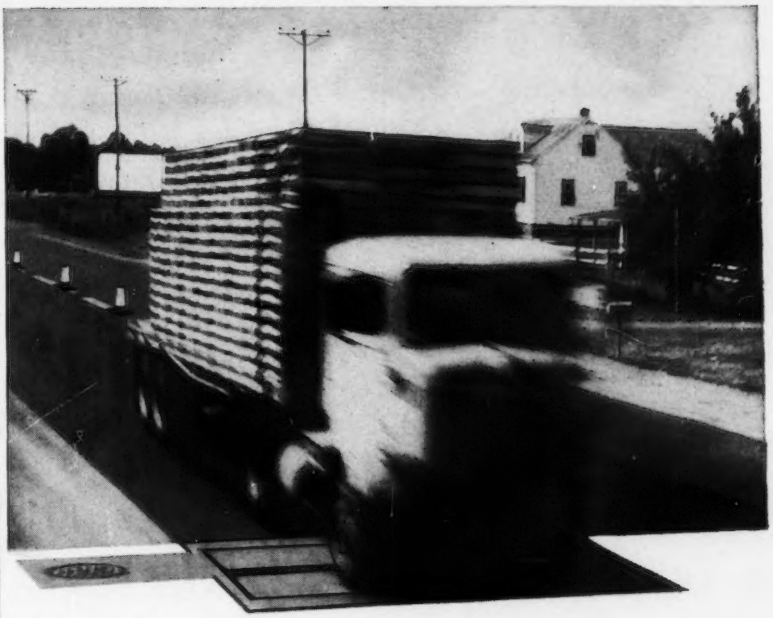
The Youngs left Sacramento on March 15 and are now living in Summit, New Jersey, at 96 New England Avenue.

Kansman Joins Rader Firm In Miami

Sven Kansman (Assoc. Mem., ITE) has joined the staff of Rader and Associates in Miami, Florida as Traffic Engineer.

Prior to this consulting work, Kansman had been with the City of Detroit for seven and a half years. During this time he served as traffic signal engineer and later in charge of the thoroughfare section of the design division. Most recently he had worked with the Wayne County Road Commission as an assistant highway planner making route location studies for the new Interstate Highway system.

(Continued on page 491)



Save time...cut truck weighing costs with Cox & Stevens Overload Detectors

. . . DETECT OVERLOADED VEHICLES WHILE THEY ROLL

No more dangerous lineups and delays for weighing . . . no more penalizing legally loaded trucks. When Cox and Stevens Overload Detectors are installed, axle weight violators are screened out and are directed by a signal to a roadside static scale, *while other traffic moves down the highway*. Traffic congestion is eliminated, time is saved, trucking and weighing costs are cut, and only trucks indicated as overloaded need be stopped for static weighing.

Electronic load cells support the scale platform flush with the highway. Load cells are hermetically sealed . . . have no moving parts to wear. Overload Detectors are adjustable to state weight limits, have plug-in components for quick, simple maintenance.

Cox and Stevens electronic motion weighing equipment is now installed in Iowa, Virginia, Minnesota and Oregon. Find out how these scales can help your overload control program today.

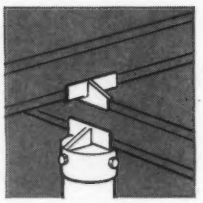
Write for Overload Detector Bulletin 3004T or Traffic Research Scale Bulletin 3005T

ELECTRONIC SIGNAL CO., INC.

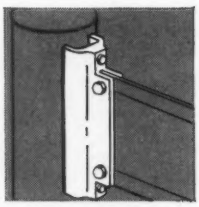
19 WEST 50th STREET, NEW YORK 20, N. Y.

neptune
A Subsidiary of Neptune Meter Company

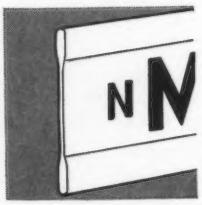
Crisscross signs are mounted on post tops with cast brackets, which provide machined slots and aluminum socket head set screws to hold the extruded blades.



Cantilevered signs use extruded brackets for strapping to existing utility poles or bolting to pipe posts; Alcoa designs accommodate either type of installation.



Blades, extruded like a miniature I-beam for high strength, are available in 6¾" and 6" widths. They are adaptable for either Scotchlite or baked enamel finishes.



Alcoa Announces a New Street Sign System for Easier Mounting, Longer Message Life

Cantilever or crisscross, you can now erect street name signs with major savings in time and labor. And you can count on doubling or even tripling message life. Both gains are achieved with the new Alcoa system incorporating design advances in aluminum blades and brackets.

The blades, extruded from tough Alcoa® Aluminum alloys, are actually miniature I-beams. They'll stand the gaff of 100-mph winds, resist vandalism and end the rust that wrecks the message film. Extruded brackets are provided for cantilever mounting, and cast brackets handle post-top crisscross signs.

Beginning in Chicago, where 6,000 of these new signs are on the job, major cities have been quick to adopt this new, moneysaving system. Consult the nearest of the manufacturers listed below; he can supply finished signs and brackets. Aluminum Company of America, 1682-G Alcoa Building, Pittsburgh 19, Pa.

Fasten Aluminum With Alcoa Aluminum Fasteners

These manufacturers sell finished street name signs of Alcoa Aluminum

California Metal Enameling Co.
6904 East Slauson Avenue
Los Angeles 22, California

Federal Sign & Signal Corp.
8700 S. State Street
Chicago 19, Illinois

The Grote Manufacturing Co., Inc.
500 Lafayette Avenue
Bellevue, Kentucky

The Hunt Company
18308 James Couzens Hwy.
Detroit 35, Michigan

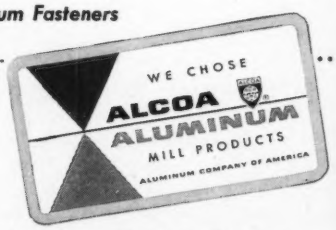
Minnesota Mining & Manufacturing Co.
900 Fauquier Avenue
St. Paul, Minnesota

Mulholland-Harper Co.
5820 Tacony St.
Philadelphia, Pa.

National Safety Engineers, Inc.
3910 First Ave., South
Birmingham, Alabama

Standard Sign & Signal Co.
470 Main Street
Clinton, Massachusetts

Zumar Industries
1608 Essex Street
Los Angeles 28, California



Your Guide to the Best in Aluminum Value

THE ALCOA HOUR
TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

Strictly Business

New Device for Skip Line Marking Developed

A new device for intermittent marking for streets and roads has been developed by Wald Industries, and reports now being received indicate highly successful tests in various parts of the country.

Retracing existing intermittent and adjusting cycles for skip line markings have been vexing problems to traffic maintenance men. This new device, however, handles these difficult tasks with remarkable efficiency, according to the manufacturer.

The mechanism of the device, known as the SL46 Skipliner, is a revolutionary idea, departing from the normal gadgetry formerly used to meet such problems. It involves an intricate epicyclic gear train with a mechanical interlocking device, precision built and assembled in a sealed unit. By manipulation of conveniently designed controls, the operator can stop the cycle, return the cycle to a zero or starting position, or advance or retard the cycle indefinitely for exact registration over old lines. It is also possible for the operator to change from a skip to a solid line on curves and return to the skip sequence after the curve by movement of the same control lever.

Although the unit was designed for truck towed stripers of all makes, engineers report that it can be adapted for a larger type portable, self-propelled striper.

The new device will be released this summer for general sale and use. Preliminary information is available by addressing Mr. Carl Brown, Project Engineer of Wald Industries, Inc., Huntingdon, Pennsylvania.

New Signs Offered By Grimm Stamp & Badge

A new "budget" line of traffic signs has been introduced by Grimm Stamp & Badge Company.

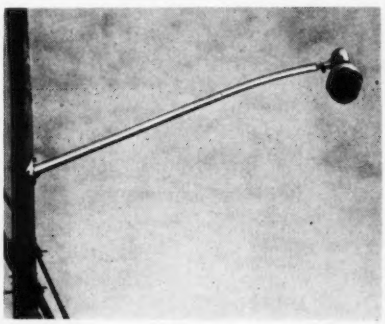
This new line consists of flat silk-screened signs with a baked enamel finish on zinc coated bonderized steel. Over 140 different U.S. standard wordings and symbols are available from stock. These budget line signs are available either plain or reflectorized.

Since 1875, Grimm Stamp & Badge Company has made Grimco die-embossed metal traffic and street name signs. A new catalog and price list, including both the new budget line of flat signs and the quality line of die-embossed signs, is available from Grimm Stamp & Badge Company, 8105 Rosalie Avenue, St. Louis 17, Missouri.

Aluminum Bracket Offered by Pfaff & Kendall

A new 10 ft. aluminum tapered elliptical lighting bracket designed for use on existing or new utility poles is in production at Pfaff & Kendall, Newark, New Jersey.

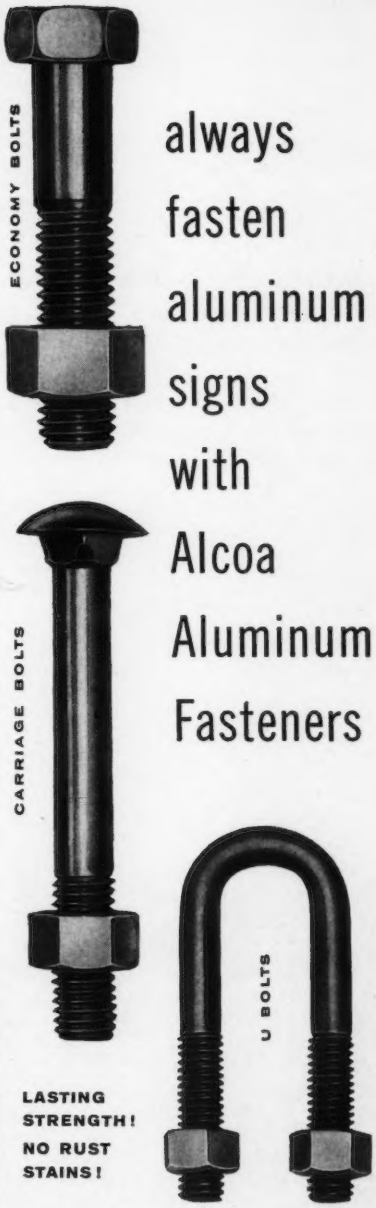
The manufacturer reports this as the first bracket of this length to eliminate external tie rods and braces and yet be capable of withstanding 100 mile-per-hour wind loadings. The mounting plate is small in area and requires only one thru-bolt and two lag screws for installation. The easy installation and low maintenance requirements make this bracket low in actual cost, according to the manufacturer.



New Speed Meter Announced by Streeter-Amet

A new portable, tube operated instrument to measure and register the speed of passing vehicles has been announced by Streeter-Amet Company. Called the Ametron Electronic Speedmeter, the device features speed and accuracy of the checking operation.

The equipment can be handled by one man, who can check speeds in both directions. As the distance between the two road tubes is only 11 ft., the



To stop the rust that stains message films and eats away at holding power, fasten aluminum signs with Alcoa® Aluminum Fasteners. They never rust! There are nuts, bolts and washers for every sign. Call your local Alcoa sales office for details, samples, prices. ALUMINUM COMPANY OF AMERICA, 2235-G Alcoa Building, Pittsburgh 19, Pa.

ALCOA ALUMINUM FASTENERS
ALUMINUM COMPANY OF AMERICA

Your Guide to the Best in Aluminum Value

tubes can be placed in strategic spots to permit a check on the speed of a vehicle before the driver is aware that a check is being made. The device can be operated from a vehicle by simply plugging it into the cigarette lighter.

For a free illustrated brochure, write to Streeter-Amet Company, Grayslake, Illinois.

Marbelite Names Conrad Lenz as Representative

C. Conrad Lenz has been named Marbelite representative in the Boston area and immediate surrounding states. Lenz is at present a cooperative student at Northeastern University, but is spending his full time days with the Marbelite Company.

C. Conrad Lenz

A'G'A Issues Bulletin On Letter Cutouts

A new six-page illustrated bulletin, S-4B, which presents dimensional and application information for cutout alphabets, numerals and accessories with Stimsonite reflectors has been issued by the A'G'A Division, Elastic Stop Nut Corporation of America, Elizabeth, New Jersey.

The dimensions for cutout capitals, upper and lower case letters, digits and accessories are given in chart form on two pages. A'G'A's complete line of border strips, border corners and U.S. route shields are presented with their dimensions and appropriate Stimsonite reflector.

Two tables provide figures for proper spacing of the cutout letters and digits. A page of photographs shows typical installations with A'G'A cutout letters, numerals and arrows.

New Publications

Highway Needs for Civil Defense.
U. S. Bureau of Public Roads for the Federal Civil Defense Administration, October 1956, 48 pp., $0.25 (from Supt. of Documents, U. S. Government Printing Office, Washington 25, D.C.)

The Bureau of Public Roads of the Department of Commerce, in cooperation with the State highway departments, has completed a preliminary report on a national study of the highway needs for mass evacuation and other civil defense purposes.

The study covers 185 target areas, as listed by FCDA. It evaluates on a uniform basis the adequacy of the present highway and street systems outside the urban complex for evacuation of urban population by motor vehicles. In addition, the extent and cost of highway improvements that would permit faster or more complete evacuation of urban population are estimated.

As the purpose of the study was to determine these needs on a nation-wide basis in as short a time as possible, some of the methods and procedures used were necessarily quite general in character, and will require further local analysis. The report, however, provides a sound nation-wide assessment of the civil defense highway requirements in rural and suburban areas.

Traffic Signals.
J. T. Hewton, P. Eng., The Ontario Traffic Conference, c/o Traffic Coordinator's Office, 2001 Eglinton Ave. E., Scarborough, Ontario. 180 pp. (processed), $5.00 ($3.50 to members of O.T.C.).

This volume represents material prepared by Mr. Hewton as a text for use in connection with a course he conducts at the Ontario Traffic Conference. It is in actuality a manual on traffic signals.

Based on Canadian practice, the volume will be found in a few minor points to go contrary to U. S. practice. In general, however, it presents a very complete picture of traffic signals under general headings of equipment, design, installation, maintenance, and timing. An introductory section covers definitions and a final section discusses special signals such as lane-usage, portable, and other signals.

The author points out in a preface that his discussion of signal warrants contains much original material and he asks readers for comments.

Also worthy of note is the section on signal timing, which has been published as a separate report by the Canadian Section of the Institute.

Driver Characteristics.
Bulletin 152, Highway Research Board, 2101 Constitution Ave., Washington 25, D.C., May 1957, 37 pp., $0.80.

This bulletin contains four papers on driver characteristics as presented at the 1956 Annual Meeting of HRB.

The first, on "Personal Characteristics of Chronic Violators and Accident Repeaters," describes the findings of 2½ years of operation of the New Jersey Accident Prevention Clinic, set up by the Motor Vehicle Division in October 1952.

The second deals with "Dynamic Visual Fields," particularly with regard to vehicle accident experience, driver training, vehicle design, and highway planning.

A third paper describes the first phase of a special study at Iowa State College on "Effect of Rest Pauses and Refreshment on Driving Efficiency."

The fourth paper, a report by the Committee on Road User Characteristics, presents a pilot study investigation of information on driver behavior and other factors from reports of "near accidents."

A Symposium on Highway Shoulders.
Bulletin 151, Highway Research Board, 2101 Constitution Hall, Washington 25, D.C., May 1957, 27 pp., $0.75.

For a long time, research on the design, performance, and maintenance of highway shoulders has been insufficient and inadequately correlated.

This symposium, which was solicited and organized by the Board's Department of Design, was developed to bring together, from all departments, the most recent thinking on shoulder problems and to try to single out specifically needed research. Thirteen contributors, each representing a separate committee, participated.

These statements regarding many facts and principles that are presently applicable, and the ideas expressed concerning what is still desired to be learned in order to make shoulders function more nearly satisfactorily, deserve much serious thought. These writings leave little doubt that there is

WISCONSIN cuts costs with HIGH DENSITY OVERLAID* plywood signs

State's 150,000 signs are maintained by 18 two-man crews; central sign shop is in Madison.

The Traffic Services Section of the State Highway Commission of Wisconsin has experimented with every type of sign material on the market. On the basis of tests and field experience, it is now using considerable amounts of high density overlaid plywood for reflectorized highway signs. The commission cites these three reasons why:

1. Lower cost—Department figures on completed reflectorized signs show high density overlaid plywood enjoys a marked advantage over metal. A 30" overlaid plywood STOP sign for example, costs $1.05 less than 0.081" aluminum.

2. Durability, appearance, vandal resistance—The overlay prevents checking or grain raise, extends useful life of sign. The unpainted sign back surface has a pleasing appearance, and the material seems less subject to vandalism than metal, especially by shooting.

3. Adaptability—Panels can be carried in stock in full sheets and cut to size as needed with inexpensive shop tools. Larger size plywood signs require fewer posts and framing members than comparable sheet metal signs.

OVERLAID FIR PLYWOOD* GIVES YOU THESE ADVANTAGES:

- Combines strength, rigidity and workability of plywood with smooth, durable fused resin-fiber surfaces.
- Great resistance to severe weathering . . . accidents . . . gunshot, bending, other acts of vandalism. No progressive deterioration after damage. Cannot rust or corrode.
- Perfect for long-lasting paint or silk screen finishes. Reflective sheeting may be applied direct to high density overlay, eliminating prime coat.

*OVERLAID PLYWOOD is top-quality DFPA quality-tested Exterior fir plywood (EXT-DFPA®). Two types: (1) High density overlay is hard, glossy; (2) Medium density is opaque, with texture like drawing paper.

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OVERLAID*

Fir Plywood

MAIL COUPON FOR DETAILED INFORMATION

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington, Dept. 161 (Good USA only)
Please send complete application-specification data for overlaid plywood for traffic signs.

Name_____

Firm or Dept._____

Address_____

City_____ Zone_____ State_____

need for more research, both nationally and regionally, on this important feature—highway shoulders.

Acquisition of Land for Future Highway Use.
Special Report 27, Highway Research Board, 2101 Constitution Ave., Washington 25, D.C., 1957, 80 pp., $3.20.

This report is one of a series of studies of highway laws to be published by the Committee on Highway Laws of the HRB.

Existing statutes and court decisions have been analyzed, with more than 300 judicial decisions reviewed. The literature has been studied to locate all pertinent material.

Designed primarily for those directly concerned with the legal aspects of land acquisition, it is hoped that the report will be useful to highway administrators, planners and others.

OPERATIONAL PROBLEMS

(Continued from page 458)

the community being approached and of the availability of comfort, food, fuel, overnight and shopping facilities will be an acceptable public service. In addition, a well marked, adequate and properly maintained access connection from the controlled access highway to the community center is imperative. Parenthetically, some sort of system needs to be developed for advising motorists "on the fly" of the availability of overnight accommodations. Certainly no motorist will desire to leave the through highway only to be greeted with a battery of "No Vacancy" signs. Lack of positive information on where to find sleeping quarters tempts the motorist to keep on driving beyond the fatigue limit, a condition which should be avoided. By the same token no motorist wishes to be directed to third-rate or criminally-dominated facilities. This imposes a responsibility on the part of the roadside industry and community officials.

Where adequate facilities are not available at intervals frequent enough to satisfy public convenience the state may then provide "Service Areas" adjacent to the expressway. Such areas might be planned in conjunction with an interchange. Contrary to practice on turnpikes it is believed areas financed by the state may well be provided on a simple "recovery of cost basis" and not used as revenue producers. That is, it would seem good public policy that facilities be provided solely as a service to the public and not for the purpose of raising revenue.

The plan developed by a state highway department for freeways and parkways was for the state to design the site, acquire the necessary land, grade, drain, pave and landscape the area, bringing in the necessary utilities such as electric power, telephone, water, etc. The site was laid out in lots each suitable for a complete "gas station." It was proposed at first to lease these lots on the basis of competitive bids to individuals, who would construct the buildings, gasoline pumps and other accessories, at lease rates sufficient to amortize the investment and provide for annual maintenance. Prospective lessees objected to the principle of constructing permanent buildings on land owned by others and the procedure was modified. The lots were offered at public sale, each lot going to the highest bidder, but not more than one brand of petroleum product was permitted in each area. Building architecture and signs were required to be approved by the state highway commissioner. In practice each site was laid out with four lots initially but with provision for two more, which could be added any time in the future the public interest would require.

Publicly provided fixed plant roadside service will probably be confined to two essential items:

(A) fuel
(B) food

Facilities for dispensing fuel, oil and road accessories are required on all highways except very short projects, probably less than ten miles long although no general pattern can be, or at least, has been established. Environmental conditions on each highway are different and a service area policy needs tailoring to the peculiar requirements present on each project.

Food service is required on the longer projects particularly through rural areas. Again no rule can be applied but it would appear that food facilities would not be required where facilities are available at forty to fifty mile intervals.

Deluxe type overnight accommodations have not been provided so far on controlled access highways and there is considerable doubt whether they are required with the possible exception of bunk space for tired truckers. It is believed that the provision of sleeping accommodations should be approached with great caution. The problem is fraught with many pitfalls and it is hoped that some workable solution can be devised without involving the highway agency in a business, particularly well suited to construction and operation by private enterprise.

Controlled access highways on which service facilities have been integrated into the highway fall into two categories:

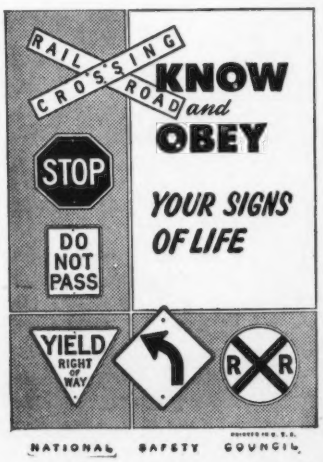
(A) freeways and parkways operated toll free.
(B) toll highways.

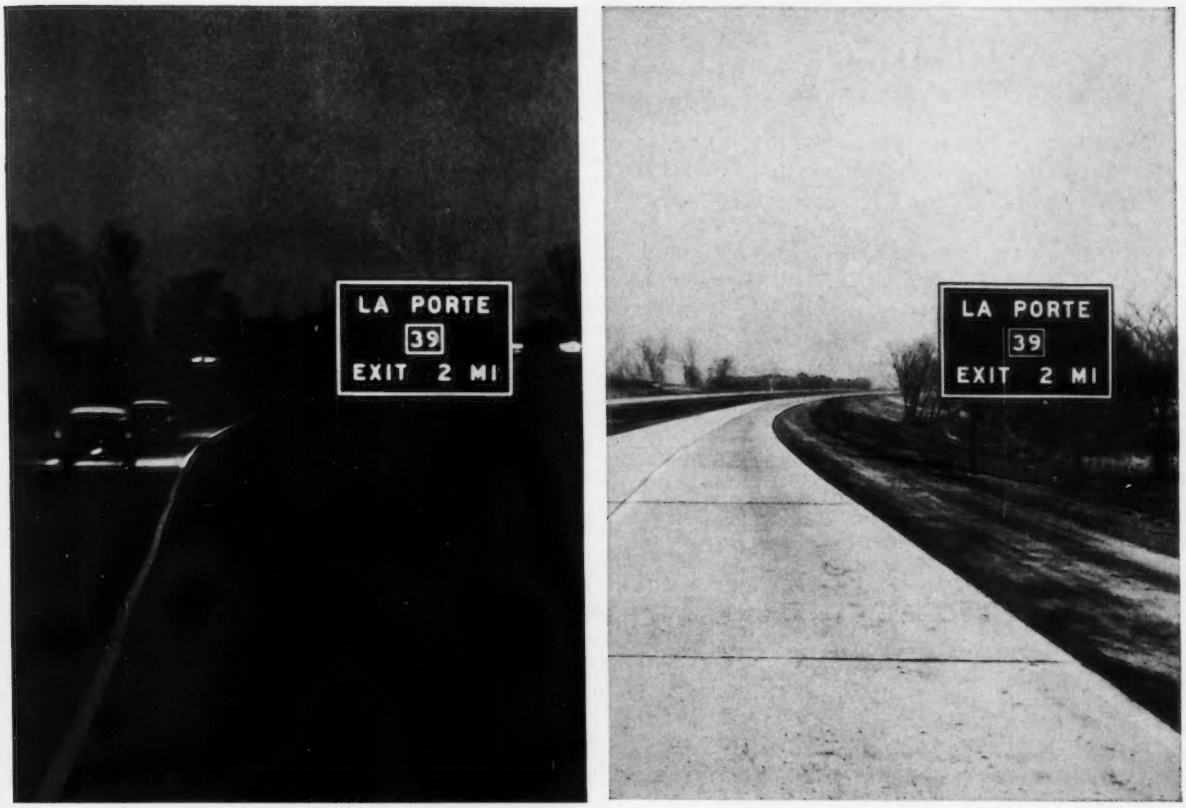
In the first case service, not revenue, is the controlling consideration. In the second, revenue and service are of equal importance since most toll projects must be fully self-liquidating.

It would also seem that no on-the-road services should be provided not immediately essential to the safety and requirements of the travelling motorist. Such policy should cut short any tendency toward paternalism and restrict facilities to "essential services" only.

In addition to "fixed plant" service areas, it is necessary to make arrangement for patrol services for breakdowns, flat tire and out-of-gas cases, and with garages for repair, towing and wrecking services; first aid, ambulance and fire department availability. The scope of the "gas" patrol is indicated by yearly travel of 600,000 miles resulting in aid to 28,000 distressed motorists on a turnpike. In addition, 45 private towing and repair garages responded last year (1955) to 15,000 emergency calls, 22 fire companies 80 calls; ambulance and hospital squads responded 323 times.

(End of Part 1—Part 2 will appear in an early issue.)





STIMSONITE signs, read easily day or night, are standard on most of the nation's new controlled-access highways.

on the Indiana Toll Road...

STIMSONITE SIGNS SHOW THE WAY

STIMSONITE letters assure sharp legibility even in the dangerous hours of dawn and dusk.

Night or day, STIMSONITE signs provide brilliantly legible, attention-compelling messages. Because they "speak louder" than other signs they are *safer* signs for high speed traffic. That is why STIMSONITE is *first* choice for the nation's major highways.

Embossed, aluminum cut-out letters, assembled with STIMSONITE® plastic reflectors, are non-fading and weather proof; they do not require maintenance or renewing. The unique prism construction of the STIMSONITE reflectors returns the maximum amount of light from headlamps, thus ensuring optimum visibility.

Qualities like these make STIMSONITE signs the safest and most economical choice for your signing programs. Specify them for the outstanding efficiency and economy they offer.

STIMSONITE® *for* — *Seeability* / *Readability* / *Durability*

AGA DIVISION

ELASTIC STOP NUT CORPORATION OF AMERICA

1027 NEWARK AVENUE, ELIZABETH 3, NEW JERSEY

Institute Affairs

Board Acts on Institute Affairs

The Houston meeting of the Board of Direction, held June 7 and 8 in conjunction with the Texas Section, saw action by the Board on many matters affecting the Institute.

Among other actions, the Board accepted the invitation of the President's Committee for Traffic Safety to prepare a report on the status of accident prevention and needs for the future, to be presented at a conference of public officials in Washington next December. President McMonagle was authorized to appoint a committee to develop such a report, for submission through the Technical Council to the full membership in September.

In other actions, the Board approved submission of a brief to the FCC, supporting in general the position of AASHO in the Commission's proposed revision of rules for frequency allocations in the highway traffic field. The Institute brief adds to the AASHO position a request for a more satisfactory band for use in radio control of traffic signals and for a 3-year licensing period for radar speedmeters instead of the present 1-year arrangement.

New Section and New Student Chapter Voted

A petition from eight members of the Institute residing in Puerto Rico for the establishment of a Puerto Rico Section was acted upon favorably by the Board, and a proposed constitution and by-laws were approved. This thus becomes the fourteenth local section of the Institute.

Also approved was a petition for a Student Chapter at Purdue University, with Prof. Donald S. Berry as sponsor. This was approved, and makes the fourth active student chapter.

Membership Action at Houston

A total of 91 membership cases were considered by the Board at Houston. Of this total, 62 were new applicants and 29 were transfer cases.

Of the 62 new applicants, the Board voted to approve 48. 31 were elected Juniors, 14 Associates and 3 Members. Of the 29 transfer cases, 25 were transferred in grade, with 14 moving up to Associate and 11 to full Member status. One case was held over to the September meeting in order to develop further information.

It was voted to accept two new Affiliates, with invitations authorized to Gordon H. Sheehe, Director of the Highway Traffic Safety Center at Michigan State University, and to C. M. Gilliss, Deputy Director of the California Department of Public Works.

New Sustaining Organization

The Board voted to extend an invitation to Eastern Metals of Elmira, New York, to become a Sustaining Organization for 1957.

Insurance Trustees' Report

The Board heard a report from the Trustees of the Insurance Plan, indicating that 307 members had subscribed to the life insurance provided by the plan. Of these, 131 are Members or Affiliates, 129 are Associate members, and 49 are Junior members.

It was also reported by the Trustees that they had, by formal resolution, relinquished any rights which they might have as owners to any proceeds, transfering these rights to the estate of the insured. The Trustees also reported relinquishing any rights they might have to change beneficiaries, assigning these to the insured.

The Board approved the decision by the Trustees to designate the period of September 15 to October 15 as a second general enrollment period, at which time a general invitation would be issued to all members not subscribing to the plan to come in without medical examination.

New Membership Qualifications Proposed

The Board heard a report from its Committee on Membership Qualifications, which proposed a number of changes in the Constitution and By-Laws relating to qualifications of members. The Board approved these proposals, with minor changes, and took the first steps toward bringing the proposals before the membership at the Annual Meeting in Detroit.

The changes in general strengthened the requirements for membership. Members and Associate members must be professional engineers under terms of the proposal. Members must be 35 years of age, have had 12 years of active practice in engineering, and responsible direction of traffic engineering work for at least three years. An Associate member must be at least 27 years of age. Eliminated from the By-Laws is the present provision for granting Junior membership to applicants over 35 years of age.

Requirements for Affiliate membership are strengthened by a requirement that such persons must have been in responsible charge of important work for at least five years, shall be not less than 35 years of age, and shall have been engaged in his special pursuit for at least 12 years. A maximum number of Affiliates would be reduced under the proposal from 20 per cent of the total number of Members and Associate members to not more than 10 per cent of such total.

Added to the By-Laws would be definitions of professional work and sub-professional work to be used in determining the time spent in the active practice of traffic engineering. Sub-professional work would be counted as equivalent to one-half year of professional work. Also defined in the By-Laws would be responsible charge, now covered only by a Board of Direction policy statement.

Among other minor changes proposed is one requiring that references be Institute members of a higher grade than that for which the applicant is applying. Applicants for full membership would be required to furnish the names of five full Members as references.

Traffic Engineering Awards Committee Reports

The Board gave considerable attention to the subject of awards to cities and states as a cooperative endeavor with the National Safety Council's Annual Inventory. Such awards have been given by the Institute for several years, with 8 states and 24 cities receiving such awards a year ago.

Although not accepting completely a report furnished by its own Traffic Engineering Awards Committee, the Board reached several decisions about such awards. First, it was decided not to make any such awards in 1957, based on 1956 performance. Second, it was agreed that a letter should be written to the National Safety Council informing them of this decision about 1957, but at the same time expressing our interest in the Annual Inventory

as a device for measuring traffic engineering performance, and indicating our intention to continue our cooperation with the Inventory Program as such a measuring device.

Two other actions in this area included a decision to instruct Technical Committee 1F to present a special report to the Board in September on its opinions in regard to the present traffic engineering inventory, and a request to the chairman of the Policy Committee for a report in September on a desirable Institute policy concerning achievement or merit awards.

Technical Committee Reports Approved

A report from Technical Committee ing Meters, was accepted as an 3B, School Crossing Protection, was accepted as an interim report to be published in the magazine for comments of the membership.

A report from Committee 4C, Parking meters, was accepted as an information report to be published and then referred to Committee 6E for inclusion in their project.

Coming Events

September 9-13—ILLUMINATING ENGINEERING SOCIETY —
National Technical Conference, Biltmore Hotel, Atlanta, Ga. Contact: IES, 1860 Broadway, N. Y. 23, N. Y.

September 16-19—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION—
Annual Convention, Fontainbleau Hotel, Miami Beach, Fla. Contact: IMSA, 130 West 42nd St., New York 36, N. Y.

September 23-27 — INSTITUTE OF TRAFFIC ENGINEERS—
Annual Meeting, Statler Hotel, Detroit, Mich. Contact: ITE, 2029 K St. N.W., Washington 6, D. C.

September 24-27 — AMERICAN ASSOCIATION OF MOTOR VEHICLE ADMINISTRATORS —
Annual Conference, Hotel Roanoke, Roanoke, Virginia. Contact: AAMVA, 912 Barr Building, Washington 6, D.C.

October 13-17 — AMERICAN INSTITUTE OF PLANNERS —
Annual Meeting, Congress Hotel, Chicago, Illinois. Contact: AIP, 34 Brattle St., Cambridge 38, Mass.

October 14-18—AMERICAN SOCIETY OF CIVIL ENGINEERS—
National Convention, Statler Hotel, New York City. Contact: ASCE, 29 W. 39 St., N. Y. C.

October 21-25—NATIONAL SAFETY COUNCIL—
Annual Safety Congress & Exposition, Congress, Conrad Hilton and other Hotels, Chicago, Ill. Contact: NSC, 425 N. Michigan Ave., Chicago 11, Illinois.

November 18-22 — AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS—
Annual Meeting, Conrad Hilton Hotel, Chicago, Ill. Contact: AASHO, National Press Bldg., Washington 4, D.C.

1958

January 6-10—HIGHWAY RESEARCH BOARD—
Annual Meeting, Sheraton Park Hotel, Washington, D.C. Contact: HRB, 2101 Constitution Ave., Washington 25, D.C.

September 16-20 — FOURTH INTERNATIONAL STUDY WEEK IN TRAFFIC ENGINEERING—
Copenhagen, Denmark. Contact: World Touring and Automobile Organisation, 32 Chesham Place, London, SW1, England.

September 22-25 — INSTITUTE OF TRAFFIC ENGINEERS—
Annual Meeting, Columbus and McAllister Hotels, Miami, Fla. Contact: ITE, 2029 K St. NW, Washington 6, D.C.

Section News

CANADIAN SECTION

—Grant A. Bacchus, Secretary

Canadian Section Meeting—Quebec City (Reported by Tom Mahony)

A Canadian Section meeting was held on Monday, April 22nd at the Chateau Frontenac Hotel in Quebec City during the Annual Canadian Highway Safety Conference.

President *Ken Vaughan-Birch* chaired the meeting and those present were:

Frank Gillies, Art Lomax, Tom Mahony, Harry Burns, Fred Sansom, Walter Macnee, Ray Desjardins and *Bob Burton,* all from Ontario. *Jacques Barriere,* Quebec; *Bill Finnbogason,* Manitoba, and *John Harding,* British Columbia.

A letter was read from Dave Baldwin (dated April 3rd) with reference to the forthcoming ITE meeting in Detroit. Mr. Baldwin asked that he be advised if we would desire to have a section meeting in Detroit at the time of the annual meeting. It was suggested that Mr. Baldwin be advised that we wish to hold a section meeting early in the week, preferably Monday.

Considerable discussion centered on the possibility of getting organizations, i.e. oil companies, automobile manufacturers etc. to support research. It was decided to encourage engineers to take an interest in a research project and at the same time we should support the Joint Highway Research Program presently being carried out at Queen's and University of Toronto.

Discussion also took place regarding the Canadian Section ITE sponsoring a Foundation similar to the Eno Foundation.

President *Vaughan-Birch* spoke on the Past Presidents Award letter and he felt that we should encourage engineers to take a keener interest in traffic engineering projects and it was the general feeling that we should have a "clearing house" for articles and reports, written or compiled by members throughout Canada. It was suggested that members have a check made on reports of projects carried out by their staff and that copies of these reports could be made available to other members of the CITE.

A general discussion was held on the advisability of raising the present fees of members belonging to the Canadian Section of the Institute. It was moved by *W. Q. Macnee,* seconded by *Frank Gillies* that a committee composed of *Art Lomax, Bill Finnbogason, Jacques Barriere,* be formed to report on this matter. Mr. *W. Q. Macnee's* name, as Past President, was added to this committee. A report is to be brought in at the annual ITE meeting at Detroit.

Regular Toronto Meeting

A regularly scheduled dinner meeting of the Toronto Group was held in the dining room and debates room of Hart House in the University of Toronto. Over 70 persons were in attendance at this meeting including *Dwight Myers* from New York City, J. Ward of Ottawa (our guest speaker), Gord Whetstone of Guelph, J. D. Gibson of South Burnaby, B.C. and C. L. Kee of Calgary, Alberta. The latter two gentlemen were the guests of *Frank Gillies* of London, Ontario.

Our guest speaker was Mr. Joseph P. Ward, Traffic and Movements Officer for the Federal Civil Defence Headquarters in Ottawa. Mr. Ward gave a very informative lecture on evacuation procedures which may have to be adopted in the event of nuclear attack on any of our major cities. He also indicated the part the Traffic Engineer must play in this important work and mentioned the possibility of having a Traffic Engineering Forum on Civil Defence Techniques. This forum would include Traffic Engineers from all of Canada and you are invited to contact the Editor if you are interested.

Showings of the film— "Freeway Traffic Flow"

During the week of March 25th, 1957, the film "Freeway Traffic Flow" was shown to approximately 300 persons at 10 separate showings to the following organizations or groups:

Institute of Traffic Engineers — Toronto Group.
Department of Highways of Ontario—including the Minister and Deputy-Minister of Highways.
Metropolitan Toronto Police Traffic Division.
Metropolitan Toronto Roads Department.
Metropolitan Toronto Traffic Engineering Department.
Metropolitan Toronto Planning Board.
Various engineers from various member municipalities of the Metropolitan Toronto Area.
Representatives of the major consulting firms in the Toronto Area.

It was also shown as part of the technical session of the Annual Convention of the Ontario Traffic Conference at which over 200 persons were in attendance. This organization is comprised of Traffic Engi-

neers, Traffic Coordinators and Traffic Police from all major cities and towns in Ontario.

Montreal: Jacques Barriere, Assistant Director of the Montreal Traffic Department has announced the following change in home address: 5495 Place d'Arguillon, Montreal 9, P.Q.

Niagara Falls: The Ontario Traffic Conference held its annual convention recently and held elections. The following CITE members were elected to executive positions:

R. J. Desjardins ..... President
H. R. Burton ..... 2nd Vice-President
A. Lomax ..... Director
G. Whetstone ..... Director
S. Cass ..... Director
R. Kerr ..... Director

Quebec City: Walter Macnee reports that progress reports were received from the chairmen of all sub-committees working on the Manual of Uniform Traffic Control Devices at a special meeting of the Manual Committee held on April 22nd, 1957 in conjunction with the Annual Canadian Highway Safety Conference. The first draft of the manual will be presented at the Canadian Good Roads Association Convention in Saskatoon, September 25th-27th.

Toronto: Murray Jones, Commissioner of Planning and Secretary-Treasurer of the Metropolitan Toronto Planning Board and one of our Section Affiliate members, announced the birth of another daughter on May 3rd. This latest addition to the Jones' family gives Murray four girls and one boy.

California: Bob Campbell has announced that his thesis for his course at the University of California is to be a study of design hour volume relationships on rural and suburban Ontario highways. Bob is analyzing hourly traffic volume data from eleven permanent counting installations in Ontario during the years 1952 to 1956 inclusive.

Quebec City: Tom Mahony has been appointed chairman of a subcommittee of the Engineering Committee of the Canadian Highway Safety Conference. This subcommittee is to study and report to the 1958 meeting on a possible standard practice in traffic accident reporting so that this information can be used to the best advantage in Traffic Engineering studies, enforcement, and education. *Bob Burton* was also named to this subcommittee.

Toronto: Tom Hewton has been named to Committee 7E of the Institute of Traffic Engineers. This committee is studying electronic signal systems with particular application to special installations on emergency vehicles such as fire trucks and ambulances. By ultra-high frequency radio control the way is cleared through intersections by switch arrangements between the installation on the vehicle and the installation on the traffic controllers at street intersections.

Toronto: The Association of Professional Engineers of the Province of Ontario has announced a plan to provide for the certification and recording of engineering technicians. Anyone interested should contact the Association at 236 Avenue Road in Toronto.

Toronto: The Ontario Department of Highways has completed a Highway Needs Report for the Provincial highway system. This is the first such report to be done in Canada and is an excellent presentation. *Phil Wade* and *Walter Macnee* were among those who developed this document.

INDIANA, OHIO AND MICHIGAN SECTIONS

The three Sections held a joint meeting late in May at Pokagon State Park in the northeast corner of Indiana. With more than 35 members present (almost all accompanied by their wives), those responsible for the planning felt repaid for their efforts.

A technical session saw and heard a panel of *Bill Bilby* (Ind.), *Al Malo* (Mich.), *Harold Eckhardt* (Ohio), and *Carl McMonagle* (Mich.) discuss problems related to the new highway program.

During the period a business meeting of the Ohio Section was held, with new officers elected, as follows:
President ..... *A. J. Carrothers*

Ohio and Indiana watch the square dancing.

for HIGHWAY ENGINEERS only...

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General Sales Manager,
Reflective Products Division, Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.

We've often heard engineers say that a matter of concern to them is the "no vision area" caused by trees, bushes, buildings and other obstacles at some intersections. Such a situation is shown by the diagrammatic drawing in the advertisement. *(Page 481).*

Some of these obstructions off the road create actual "killer's corners" very similar to the scene shown. Naturally, the first thing you would do is clear the area of obstructions. But, as you well know, this is sometimes impossible.

In such instances, reflective signs of "Scotchlite" Sheeting help reduce the danger. Perhaps you have some limited vision intersections in your area that could use the day and night safety offered by these all-weather, easy-to-see signs.

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The advertisement mentioned above also appeared in the June 28 issue of U. S. NEWS & WORLD REPORT, a magazine seen and read by leading members of every community. It is intended to help create a better understanding of problems you face in highway safety... and some of the economical solutions used by your profession.

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These vivid signs are built with your safety in mind. They contain their own optical system that reflects the complete sign when caught in your headlight beam. Rain or snow does not black out this bright warning. And you can see the entire sign message whether you are far down the road or within ten feet of it. No other signs today bring such safety to your driving.

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TURN TO PAGE 480 FOR IMPORTANT INFORMATION ON THIS NEW SAFETY CAMPAIGN

South Dakota uses signs of "Scotchlite" Sheeting for safety day and night.

Vice President ..... *Herbert B. Woodling*
Secretary-Treasurer .... *V. James Musick*

Golf (between showers) ping-pong, boating, bridge, and square dancing provided entertainment for the ladies (and the men too).

METROPOLITAN N.Y. SECTION

—Arnold G. Fisch, Secretary

April 24th Meeting Notes

Eighteen members and guests spent an interesting afternoon at Newark Airport inspecting the air and ground control facilities and discussing the operation of the airport with operational personnel. One of the more spectacular facilities that was observed is the approach lighting system at the south end of the new instrument runway. Twenty-six members and guests met later at the Treat Restaurant in Newark for the evening dinner meeting. President *Quimby* called the business meeting to order at 8:30 p.m.

Eligible junior and associate members were again urged to submit papers for the Past President's Award. Mr. *Leonard* has written to the sources listed in the announcement and has available a large amount of material concerning possible topics.

President *Quimby* appointed a nominating committee consisting of *Richard Strickland,* Chairman; *Nathan Avins* and *Edmund Ricker.*

A lively discussion on highway capacity followed the showing of "Freeway Traffic Flow," a sound color film produced by the California Division of Highways. The meeting was adjourned at 9:45 p.m.

Bruce MacDonald

Bruce is now associated with John R. Campbell, Consulting Engineer, in Buffalo, New York.

Annual Visit of Yale Bureau to NYC

The 1957 class of the Yale Traffic Bureau visited the Port Authority and the New York City area on its annual trip to the City on April 26th. There are several Metropolitan Section members among the class at Yale this year. The tour consisted of a discussion of the Port Authority by several members of the staff followed by an inspection of the Port Authority's vehicular facilities in the afternoon. This year the class was free in the evening for a personal inspection of the many facilities available in New York.

Trees and Shrubbery Reduce Traffic Noise

Experiments conducted by the Acoustic Laboratory of the Dusseldorf Academy of Medicine in Germany indicate that the presence of trees and hedges can contribute materially to the reduction of traffic noise. The Laboratory took measurements of vehicle noises in densely-wooded areas with trees below average height, in a dense young plantation, in forest, in open woodland, near a hedge plantation and on unplanted ground. Three kinds of noise were used in the experiment: normal traffic noise from vehicles on the road, the noise from an Otto engine running at constant speed and narrow frequency-range tones emitted from amplifiers and loudspeakers.

In most cases, the noise level was definitely reduced, but on the road through the forest, reflection from tree trunks and branches increased the sound level.

MIDWEST SECTION

—Elizabeth McLean, Chairman, Publications Committee

Larry Dondanville was recently hospitalized with a gastric disturbance which we suspect may have been caused by his recent development of the "Persia Paralyzer," a concoction of equal parts of vodka, gin, Scotch and 2-4-D, with a wash of yogurt on the rocks. We are happy to report that he is back to work (?), and suggests that the rocks (type X crushed stone) be eliminated from the foregoing for a less immobilizing after effect.

James M. Hunnicutt III, who was so recently mentioned in these columns for his achievement in winning the Poltlitzer Prize (a bicentennial award of the AASHO —American Association of Stud Hamster Owners), has done it again by assuming two (2) new positions. In rapid succession he became a proud papa (Susan Hull Hunnicutt) and General Manager of Parking (Nashville, Tenn.) It goes without saying that we are sorry to see J. Madison leave, especially in view of the fact that we had almost convinced him of the impropriety of serving chittlin's and hawg jowl at the annual ladies nite.

Anent J. Madison's departure, we understand that *Les Sorenson* is trying to lure *Marty Blachman* away from Evanston since he appears to be the only one capable of fully occupying Jim's chair. (With maybe a little extra!)

Our spies report that the House Committee, through *Charley Michalski,* is about to break the news of a contest which will make our sister sections quite envious. We tip off all Midwest ITE's to watch their mail and to attend the next meeting for this announcement.

We have also heard via some super snooping sleuths that our Springfield brethren have finally convinced one of their long-time associates, and a man who has spent over half his life in the profession, that ITE is here to stay—so he is about to jine up.

Adrian Koert has left the Evanston office to become Traffic Engineer for the City of Des Moines. This may destroy the influence of the evil triumverate of *Koert, Kim* and *Powills* that has so often led *Dick Walons* from the path of righteousness and temperance.

Henry Peck of the Park District reports that everyone has taken the news of consolidation with the same air of confidence and tranquility that would greet the announcement that Soldiers' Field had vanished. We also hear that *Jack Sorenson* is in line to become the top administrative assistant to Mr. Hy Bogash at the time of consolidation.

John Zimmerman, Al Plantin and *Art Boston,* who were recent victims of various and assorted ailments are all feeling much better we are happy to report. We are likewise happy to report that *Mac Johnson* will take more than memories back to Minnesota—to wit, a bonnie wee lassie born on May 24.

NEW ENGLAND SECTION

—A. Wallace Gove, Secretary

The fifth and Annual Meeting was held on May 23, 1957 at the Old Colony Restaurant, East Hartford, Conn. After dinner President *Dave Johnson* conducted a business meeting consisting of the following principal items:

1. An invitation from the Statler Hotel in Boston to hold the national convention there in 1960 would be acknowledged by *Dave Johnson,* and forwarded to our national organization.

2. It was agreed that at the Annual Meeting in Detroit in September it would be desirable to have a meeting of Section Presidents and that the New England Section had no desire for a Section meeting at that time.

3. A letter from President *Pepper* of the Western Section suggesting the drafting of Resolutions for reference to the Detroit meeting was read. As this was the last meeting, the matter was referred to any interested members for direct action.

4. President *Johnson* announced that he would appoint delegates to the Annual Meeting of the Connecticut Technical Council scheduled shortly.

5. *Bob Williston* reported on behalf of the Nominating Committee consisting of *Earl Flynn,* Chairman, *Bob Williston,* and *Edward Eames.* Upon receipt of this report, the nominations were closed and the following slate of officers elected for the year 1957-1958:

President ..... *Roger Chandler*
Vice-President ..... *A. Wallace Gove*
Secretary-Treasurer .. *Matthew J. Huber*

The meeting was then turned over to *Bob Mitchell,* Program Chairman, who presented a panel of three speakers on "Traffic Engineering Operational Features of the Connecticut Turnpike." *Marshall Rich* of Wilbur Smith and Associates outlined the general location and access and presented highlights on the lighting, signing, and traffic signals being installed. *George Nagel* discussed interesting details of the lighting problem and *Bob Williston* described sign and signal features. A lively and instructive question and answer period followed.

The meeting was concluded by a showing of the California movie on Freeway Operation.

SOUTHERN SECTION

—John T. Hanna, Secretary

Annual Meeting

The annual meeting of the Southern Section, Institute of Traffic Engineers took place at noon, March 4, 1957, at Richmond, Virginia. The meeting was held in conjunction with the Southern Safety Conference.

President *Art White* opened the meeting. The Secretary-Treasurer presented reports on finances and accomplishments of the Section during the year.

The election of officers was held with the following results:
Bill Mann, Nashville, Tenn., President
Fenton Jordan, Norfolk, Va., Vice-President
John T. Hanna, Richmond, Va., Secy.-Treas.

The Secretary-Treasurer was authorized to continue sending the newsletter to all potential members in the hope that they would eventually join the organization.

All members were encouraged to solicit affiliate memberships. Any person interested in traffic engineering is eligible. Dues are $1.00 per year from March 1, 1957-February 28, 1958.

Art White was appointed as the traffic engineering program chairman for the 1958 Southern Safety Conference in Memphis, Tennessee.

(Continued on page 487)

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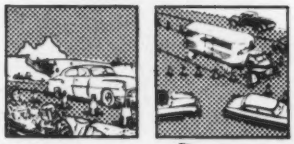

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Yearbook Changes

BECKENBACH, Col. Charles G. (Member)
Transportation Officer, U.S.A. Armor Center, Fort Knox, Kentucky.

BOX, Paul C. (Junior)
Street Lighting Engineer, Kansas City Traffic Department. SEND MAIL: 4405 East 10th Street, Kansas City 27, Mo.

BRANDT, Warren H. (Junior)
Field Engineer, Bureau of Traffic, Illinois Division of Highways, 595 South State Street, Elgin, Illinois.

BREEDING, Harold A. (Associate)
Development Engineer, Outdoor Lighting Department, Electrical & Mechanical Testing Laboratory, General Electric Company, Hendersonville, North Carolina.

BROWN, Richard E. (Junior)
Utilities Traffic Control Engineer 2, Traffic Engineering Division, 417 Lincoln Park Drive, Cincinnati 2, Ohio.

CARROTHERS, J. A. (Associate)
Traffic Engineer, Department of Service & Buildings, Division of Traffic Engineering, Municipal Building, Dayton, O.

CONE, Edward D. (Associate)
Traffic Engineer, Public Service Coordinated Transport. SEND MAIL: 180 Boyden Avenue, Maplewood, New Jersey.

COTTAM, Roy W. (Junior)
Assistant Electrical Engineer, Department of Traffic, New York. SEND MAIL: 472 10th Street, Brooklyn 15, New York.

DABEL, William J. (Junior)
City Administrator, City Hall, 640 First Street, Benicia, California.

DAVIES, Marshall F. (Associate)
Traffic Planning Supervisor, Chicago Park District, 425 East 14th Boulevard, Chicago, Illinois.

FREDRICKSON, Charles B. (Associate)
Traffic Engineer, Department of Traffic, Valley Municipal Building, 14410 Sylvan Street, Van Nuys, California.

GRAVER, Robert W. (Associate)
Assistant Manager, Public Relations Dept., California State Automobile Association, 150 Van Ness Street, San Francisco, California.

HARTUNG, Bernard C. (Associate)
Assistant to the Managing Director, California Traffic Safety Foundation, 600 Market Street, San Francisco 4, California.

KANSMAN, Sven (Associate)
Traffic Engineer, Rader & Associates, 111 N. E. 2nd Avenue, Miami 32, Florida.

KOCH, Charles W. (Junior)
Assistant Civil Engineer, San Francisco Traffic Engineering Division. SEND MAIL: 335 Buckingham Way, Apt. 805, San Francisco 27, California.

KOERT, Adrian H. (Associate)
City Traffic Engineer, City Hall, Des Moines, Iowa.

LARSON, Robert A. (Junior)
Highway Planning Engineer, Wayne County Road Department. SEND MAIL: 3856 Clintonville Road, Pontiac, Mich.

LESSIEU, Eugene J. (Junior)
Planning Technician, The Port of New York Authority. SEND MAIL: 82-45 135th Street, Kew Gardens, Long Island, New York.

MARCONI, William (Junior)
Assistant Engineer I, Department of Public Works, Traffic Division. SEND MAIL: 301 Graystone Terrace, San Francisco, California.

MARVIN, William L. (Member)
Traffic Operations Engineer, Michigan State Highway Department, Planning & Traffic Division, Lansing. SEND MAIL: 1340 Parkvale Avenue, East Lansing, Michigan.

O'CONNOR, David J. (Junior)
Engineer III, Wisconsin Highway Commission, Madison. SEND MAIL: Route 2, Box 1A, Sun Prairie, Wisconsin.

PRISK, Charles W. (Member)
Director, Highway Safety Study, U.S. Bureau of Public Roads, Washington 25, D.C.

RAYMOND, William L., Jr. (Junior)
Highway Engineer, Gannett, Fleming, Corddry & Carpenter, Inc., Harrisburg. SEND MAIL: 1511 Chatham Road, Highland Park, Pennsylvania.

SIMOFF, Abram (Associate)
Parking & Traffic Consultant, 82 Washington Street, East Orange, New Jersey.

New Appointments and Transfers

TRANSFERS

BURLESON, Joe M. (Associate)
Traffic & Planning Engineer, Room 2, City Hall, Council Bluffs, Iowa.

COLBY, Edwin F. (Member)
Assistant Traffic Engineer, Traffic Engineering Department, 147 Fountain Street, Providence, Rhode Island.

DONDANVILLE, Laurence A. (Associate)
Traffic Engineer, DeLeuw, Cather & Company, 150 North Wacker Drive, Chicago 6, Illinois.

DURHAM, Harold F. (Associate)
Assistant Traffic Engineer, 259 Civic Center, San Diego, California.

ELLIOTT, Earnest W. (Associate)
Chief Planner, Connecticut Survival Project, 92 Farmington Avenue, Hartford, Connecticut.

EWENS, William E. (Member)
Consulting Engineer, Kitchener City Traffic Engineer, 462 Morrison Road, Oakville, Ontario, Canada.

GILBOA, Israel (Associate)
Transportation & Traffic Engineer, DeLeuw, Cather & Company, 79 McAllister Street, San Francisco, California.

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GREGORY, Randolph T. (Associate)
Director of Traffic & Planning, Room 305, City Hall, Waco, Texas.

HARRIS, Robert W. (Member)
Associate Traffic Engineer, Bureau of Street Traffic & Parking, Room 306, 320 North Clark Street, Chicago, Illinois.

JAFFE, Robert L. (Associate)
City Traffic Engineer, City Hall, Evansville, Indiana.

JOHNSON, Paul R. (Associate)
Planner-Engineer, Colorado Survival Plan Commission, 703 E & C Building, 930 17th Street, Denver 2, Colorado.

KEESE, Charles J. (Member)
Associate Professor & Research Engineer, Civil Engineering Department & Transportation Institute, Texas A&M College, College Station, Texas.

KIMLEY, Robert J. (Associate)
Traffic Engineer, City Hall, Greensboro, North Carolina.

KOSAI, Yoshio (Associate)
Traffic Engineer, 502 City Hall, Tacoma, Washington.

KUNDE, George H. (Associate)
Traffic Engineer & Director of Off-Street Parking, Division of Traffic Engineering, P.O. Box 708, Coconut Grove Station, Miami 33, Florida.

LAWTON, Lawrence (Member)
Director of Traffic Planning, N. Y. Department of Traffic, 100 Gold Street, New York 38, New York.

LEONARD, H. Jack (Member)
Associate, Edwards, Kelcey & Beck, 3 William Street, Newark 2, New Jersey.

MACNEE, Walter Q. (Member)
Traffic Engineer, Ontario Department of Highways, Parliament Buildings, Toronto 2, Ontario, Canada.

MENGILIBORU, Sedat (Member)
Director of Traffic Safety Department, General Directorate of Highways, Ankara, Turkey.

PERKINS, Hubert K., Jr. (Associate)
City Traffic Engineer, Bureau of Traffic Engineering, 900 East Broad Street, Richmond, Virginia.

PERKINSON, Herbert R., Jr. (Member)
Assistant Traffic & Planning Engineer, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia.

PHANEUF, Armand L. (Member)
Senior Civil Engineer, Massachusetts Department of Public Works, 100 Nashua Street, Boston, Massachusetts.

QUIMBY, Warren S. (Member)
Highway Planning Engineer, The Port of New York Authority, 111 Eighth Avenue, New York 11, New York.

RUDY, Burton M. (Associate)
Senior Highway Engineer, Traffic Division, Connecticut State Highway Department, 284 Sheldon Street, Hartford, Connecticut.

WICKSTROM, George V. (Associate)
Assistant Civil Engineer, N. Y. Department of Traffic, 100 Gold Street, New York 38, New York.

NEW MEMBERS

ACTON, Alvin A. (Junior)
Associate Traffic Engineer, Traffic Division, Room 327, City Hall, St. Louis 3, Missouri.

ARTALE, Jack A. (Junior)
Highway Designer, Goodkind & O'Dea, Consulting Engineers, 610 Bloomfield Avenue, Bloomfield, New Jersey.

ASTRUE, Charles J., Jr. (Associate)
Senior Transportation Engineer, California Public Utilities Commission, State Building, Civic Center, San Francisco, California.

BRADLEY, John P. (Junior)
City Traffic Engineer, City Hall, Colorado Springs, Colorado.

CARLSON, Richard J. (Junior)
Assistant Traffic Engineer, Seattle Engineering Department, City-County Building, Seattle, Washington.

CLARK, Neil B. (Junior)
Traffic Engineer II, 120 North Howard Street, Glendale 6, California.

CONNER, LEE F. (Junior)
Senior Traffic Engineer, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia.

COOK, BERNARD L. (Junior)
Junior Civil Engineer, Seattle Engineering Department, 323 Smith Tower, Seattle, Washington.

COTTINGHAM, Kenneth E. (Junior)
Assistant Traffic Engineer, Seattle Engineering Department, 401 City-County Building, Seattle, Washington.

DANIEL, Arthur R., Jr. (Junior)
Acting Traffic Engineer, Ohio Department of Highways, Box 297, Muskingham Drive, Marietta, Ohio.

DANIELS, Jack A. (Junior)
Engineer I, City Traffic Engineering Department, 950 Jennings Street, Fort Worth, Texas.

EVANS, Robert (Junior)
Assistant Traffic Engineer, Bruce Campbell & Associates, 177 Milk Street, Boston, Massachusetts.

FORSTER, John L. (Junior)
Traffic Control Engineer, Ontario Department of Highways, Parliament Buildings, Toronto 2, Ontario, Canada.

FREED, Arthur (Junior)
Traffic Engineer, Westchester Co. Dept. of Public Works, County Office Building, White Plains, New York.

FREEDMAN, Allan J. (Junior)
Acting Devices Engineer, Ontario Department of Highways, Parliament Buildings, Toronto 2, Ontario, Canada.

GALEOTA, Joseph M. (Member)
Principal Traffic Engineer, Boston Traffic Commission, 112 Southampton Street, Boston 18, Massachusetts.

GATELY, Joseph E. (Associate)
Traffic Survey Engineer, Oregon State Highway Commission, Room 500, State Highway Building, Salem, Oregon.

GFROERER, William E. (Associate)
Senior Assistant Traffic Engineer, Department of Traffic Engineering, City Hall, 6th & Jefferson Sts., Louisville, Ky.

GILLIS, C. M. (Affiliate)
Deputy Director, California State Department of Public Works, Governor's Office, State Capitol Building, Sacramento, California.

HARVEY, Alexander (Associate)
Chief Project Engineer & Secretary-Treasurer, DeLeuw, Cather & Company Ltd., 52 St. Clair Avenue East, Toronto, Ontario, Canada.

HIMELHOCH, Alfred L. (Associate)
Assistant District Engineer, Division of Highways, Box 2304, Terminal Annex, Los Angeles 54, California.

HORN, John W. (Junior)
Assistant Professor, Civil Engineering (Transportation), North Carolina State College, Raleigh, North Carolina.

HUPPERT, William W. (Junior)
Chief Product Engineer, Eagle Signal Corporation, 202 Twentieth Street, Moline, Illinois.

INGRAM, William McGee (Junior)
Associate of W. F. Babcock, 2824½ Bedford Avenue, Raleigh, North Carolina.

IVEY, Joseph B. (Junior)
Traffic Operations Engineer, Bureau of Traffic Engineering, 900 East Broad Street, Richmond, Virginia.

JARVIS, Claude G. (Junior)
Engineering Assistant, Texas Highway Department, P.O. Box 1286, Houston, Texas.

JOHNSON, Arnold A. (Junior)
Assistant Traffic Engineer, 112 South 9th Street, Phoenix, Arizona.

KAHOE, Edwin M., Jr. (Junior)
Assistant to the President, Philadelphia Transportation Company, 200 West Wyoming Avenue, Philadelphia 40, Pa.

KARNIG, Barkev (Associate)
Chief of Traffic Operations, General Directorate of Highways, Trafik Fen Heyti Mudurlugu, Ankara, Turkey.

KUCHINSKI, Dennis D. (Associate)
Traffic Safety Engineer, Alberta Department of Highways, Highways Building, Edmonton, Alberta, Canada

KUDLICK, Walter (Junior)
Highway & Traffic Engineer, Edwards, Kelcey & Beck, 3 William Street, Newark, New Jersey.

LACOSTE, Jean (Associate)
Director of Traffic, City Hall, Montreal, P.Q., Canada.

MACURDY, Ernest H. (Associate)
Senior Civil Engineer, Massachusetts Department of Public Works, 100 Nashua Street, Boston, Massachusetts.

McANDREW, Edward G. (Associate)
Chief, Safety Engineering Section, Los Alamos Field Office, USAEC, Los Alamos, New Mexico.

McLEROY, Charles E. (Junior)
Traffic Engineering Aide, Traffic Engineering Department, 916 Texas Avenue, Lubbock, Texas.

NOBLE, Charles M. (Member)
Secretary to the Governor, Director of Highways, Ohio Department of Highways, State Offices Building, Columbus, O.

NOWELL, Samuel G., Jr. (Junior)
Junior Traffic Engineer, H. K. Ferguson Company, Ferguson Building, 1783 E. 11th Street, Cleveland 14, Ohio.

O'BANNON, Donald H. (Junior)
Associate Traffic Engineer, Department of Traffic Engineering, City Hall, 6th & Jefferson Streets, Louisville, Kentucky.

OWENS, Terry J. (Member)
Urban Highway Engineer, Automotive Safety Foundation, 200 Ring Building, Washington 6, D.C.

PIEDRAHITA, Jose A. (Junior)
Consulting Traffic Engineer, Carrera 19, #11-17, Bogota, Colombia, South America.

ROSEN, Nils T. I. (Associate)
Secretary, National Committee of Research Planning & Administration of Parking, Royal Board of Building, Hantverkargatan 29, Stockholm 8, Sweden.

SHEEHE, Gordon H. (Affiliate)
Director, Highway Traffic Safety Center, Michigan State University, Wells Hall, Section D, East Lansing, Michigan.

SHREVE, Frank T. (Junior)
Assistant Traffic Engineer, Contra Costa Co. Public Works Dept., P.O. Box 509, Martinez, California.

STEBBINS, William R., Jr. (Associate)
Research Assistant, Traffic Institute, Northwestern University, 1704 Judson Avenue, Evanston, Illinois.

THOMPSON, James A. (Junior)
Traffic Control Engineer, Missouri State Highway Department, Highway Building, Jefferson City, Missouri.

TIPTON, Jay W. (Associate)
Senior Traffic Engineer, Dallas Department of Traffic Control, City Hall, Dallas, Texas.

TWOMBLY, Bernard B. (Associate)
Traffic Engineer, Massachusetts Department of Public Works, 100 Nashua Street, Boston, Massachusetts.

VAZQUEZ RIVERA, Wilfredo (Junior)
Civil Engineer III, Bureau of Traffic, Department of Public Works, Stop 22, Santurce, Puerto Rico.

WEGEL, Charles A. (Junior)
Traffic Commissioner, Room 301, Municipal Building, Hamilton, Ohio.

WENGER, Deane M. (Junior)
Junior Traffic Engineer, 274 Courthouse, St. Paul, Minnesota.

SECTION NEWS

(Continued from page 482)

The new Southern Section—Institute of Traffic Engineers' seal was prepared in color and presented at the annual meeting. The colors are red, white and blue.

In the future an effort will be made to establish a junior headquarters room at each Southern Safety Conference for Southern Section-ITE members.

Also Dave Baldwin was requested to set aside one luncheon date at the ITE annual meetings for sectional meetings.

Southern Safety Conference

Bob Burch reports:

Members of the Institute of Traffic Engineers were very active and busy at the recent meeting of the Southern Safety Conference in Richmond, Virginia. The scheduled programs and events were well attended with the largest crowd ever to attend these technical programs since the Institute of Traffic Engineers assumed the responsibility of providing the program at the Southern Safety Conference.

Bill Derrick from the Georgia Highway Department was not satisfied with the full program but found a time that he could call a meeting providing the general session could be skipped. Bill did some leg work and contacted all of the State Highway delegates and arranged for a meeting room and called to order a meeting of Highway officials in attendance at the meeting at 9:30 Tuesday morning.

The purpose of this meeting was to discuss signs for expressway type of roads, and more specifically to get in agreement and start some standardization for the Interstate System. The immediate urgency for this was to provide assistance in preparing the estimate of cost for this work which all states are now in the process of doing.

Those in attendance were as follows:
Nelson C. Brooks, Montgomery, Alabama
W. R. Lewis, Flemingsburg, Kentucky
Charles W. Prisk, Washington, D.C.
W. W. Bradley, Columbia, S. Carolina
K. M. Wilkinson, Richmond, Virginia
Otha Hewitt, Little Rock, Arkansas
A. M. White, Jackson, Mississippi
C. W. Campbell, Tallahassee, Florida
David B. Martin, Mobile, Alabama
J. C. Bullock, Jr. Richmond, Virginia
Wm. S. Derrick, Atlanta, Georgia
Robert A. Burch, Raleigh, N. Carolina

The meeting was very worthwhile and informative. It did, to some degree, crystalize the thinking of the Traffic Engineers in the Southern Section who are now preparing the estimate cost, and to a degree caused their thinking to be in the same direction. It was very fortunate that Mr. *Charles W. Prisk* was available and did attend the meeting. Mr. Prisk offered helpful information by explaining the activities of the Uniform Joint Committee and the Traffic Committee of A.A.S.H.O. and explained that these two agencies with their present activities were not working separately without close coordination. Mr. Prisk pointed out that Mr. *Jim Darrell* of Minnesota was the main worker on each committee which eliminated the necessity for liaison between the two groups. Mr. Prisk also discussed and explained the recent 16-page questionnaire which had recently been distributed to us by the Traffic Committee of A.A.S.H.O., and he explained that this questionnaire was designed to substantiate or either repudiate the findings and suggestions which may ultimately become a new section in the Uniform Traffic Control Devices Manual.

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WASHINGTON (D.C.) SECTION

—A. M. Voorhees, Secretary

At the last luncheon meeting of the D.C. Chapter of the Institute of Traffic Engineers, we were very fortunate in having architect Victor Gruen as our speaker.

The Viennese-born architect, who is the author of the "Fort Worth Plan," which embodies the philosophy that cities should separate pedestrians and autos, presented a well-illustrated talk spiced with humor.

In illustrating the small concern that we give to the pedestrian in the design of our freeway systems, he quoted a recent report of the *New York Times* that a farmer in upper New York State sued the Thruway Authority, complaining that the new traffic carrier cut his farm in half. What he resented was that in order to visit his outhouse he now had to drive four miles and pay 50 cents toll.

Mr. Gruen feels that if we rebuild our downtown areas so that they provide room for pedestrian promenades where we can leisurely walk while shopping, we will be able to provide sanity in our urban development. He says that such schemes as he has proposed for Fort Worth, Green Bay and Appleton, Wisconsin will revitalize the downtown area, both economically and socially. They will encourage more shoppers to come downtown and foster new investments in the downtown area, thus affording a larger tax base.

In closing, Mr. Gruen stated that "toward that end, we need you, the traffic engineers, as our allies. We owe you the outline of a basic program according to which roads, freeways and highways are

to be designed by you. Up to now the only specification which you have got for your work was to design traffic carriers which would represent the cheapest and shortest connection between arbitrarily chosen points. The new program should be to build avenues leading to the pursuit of happiness."

Mrs. Gruen was an honored guest at the luncheon, and in addition many of our esteemed members, such as Ted Holmes, Joe Mattson, Carl Fritts, Burt Marsh and Dave Baldwin were present.

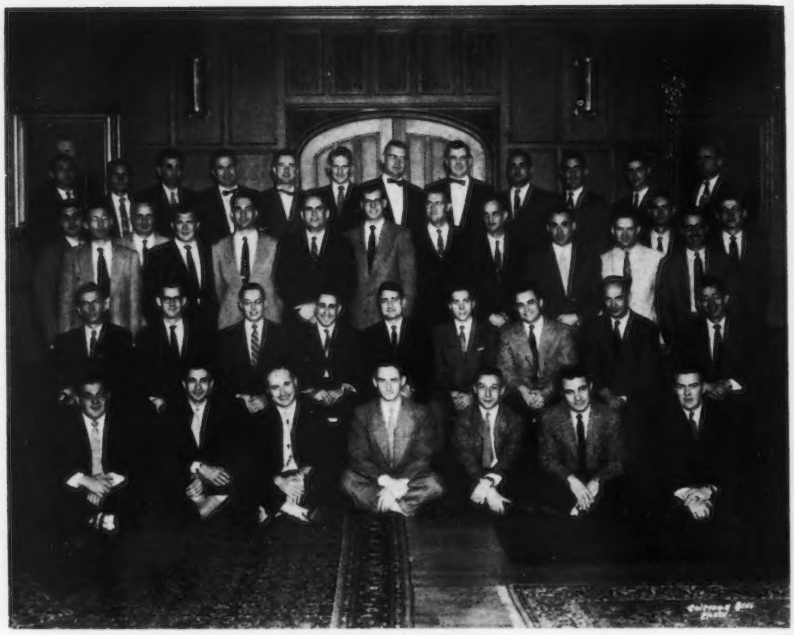
YALE STUDENT CHAPTER

—Lester L. Kolom, Secretary

Our most recent class picture, taken only a few minutes after our last final exam of the year, is reproduced on this page. For those readers who value highly their powers of perception, please compare each likeness with its counterpart taken at the start of the course as shown in a past issue of this magazine. Treat this as a before-after study to see if the knowledge gained and learning transferred has given a weighty look to each of the presently pictured blobs.

As we view our academic year here in retrospect, it is indeed with a feeling of relief that we grasp certificate in hand and return to our various points of origin and destination to leave some tire tracks on the roads of time and delay.

You might wonder just how we feel now that we can settle down to the relative ease of a full time job. What's it like now that the grind has been ground down? For those who have gone before us, there is no need to even attempt an answer. It is already indelible in their memories. For any others who are interested, a similar feeling of relief can be approximated by pinching oneself hard and long. Sure it hurts, but when the pain has subsided the relief will be exhilirating.



YALE CLASS, 1956-1957

First Row: Galioto, Abend, Kolom, Delaney, Halpern-Herla, Piteo, and Fiske.
Second Row: DeShazo, Pulliam, Harding, Richter, Ferro, Bass, Cantilli, Czyz, and Kudlick.
Third Row: Goldberg, Box, Schempers. Freeman, Coleman, Givens, Petersen, Kingman, van Miekerk, Cottam, Cunningham, Carlsson, Oliphant, and Little.
Fourth Row: Rothenberg, Tombre, Grabow, Taylor, Morawski, Grigg, Thompson, Strong, Ceballos, Bailey, Lessieu, and Burks.

Positions Available

PITTSBURGH, PENNSYLVANIA

Position: Associate Traffic Engineer.
Requirements: Engineering graduate; specialized training in traffic engineering preferred; 2 years experience in responsible charge of traffic engineering bureau or division; should be qualified to assume administrative responsibilities.
Salary: $8,560 to $10,300.
Apply: Michael J. Gittens, Traffic Engineer, 908 City-County Bldg., Pittsburgh, Pa.

PITTSBURGH, PENNSYLVANIA

Position: Planning Engineer.
Requirements: Graduate engineer; 5 years experience in traffic planning; should be qualified to supervise planning personnel.
Salary: $7,170 to $8,320.
Apply: Michael J. Gittens, Traffic Engineer, 908 City-County Bldg., Pittsburgh, Pa.

SPOKANE, WASHINGTON

Position: City Traffic Engineer.
Qualifications: Civil Engineering degree with three years traffic engineering experience, two years in responsible supervisory capacity.
Salary: Begin $7,800 increases to $9,300 in 5 annual increments. Liberal city retirement system and cumulative sick leave plus social security.
Apply: H. F. Aumack, Director of Planning and Transportation, 451 City Hall, Spokane, Washington.

MOTOR VEHICLE DEATHS AND DEATH RATES

1955, 1956 and 1957

Month	1955	1956	1957	1955-57 Change	1956-57 Change
January	2,810	2,990	2,860	+ 2%	— 4%
February	2,319	2,720	2,540	+10%	— 7%
March	2,602	2,920	2,920	+12%	0%
April	2,753	2,930	2,930	+ 6%	— 0%
Four Months	10,484	11,560	11,250	+ 7%	— 3%
May	3,101	3,170			
June	2,982	3,290			
July	3,350	3,570			
August	3,586	3,610			
September	3,446	3,710			
October	3,918	3,460			
November	3,559	3,690			
December	4,000	3,940			
Total	38,426	40,000			

All 1955 figures are from the National Office of Vital Statistics.
All others are National Safety Council estimates.

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*Street Address*_____

*City*_____ *Zone*____ *State*_____

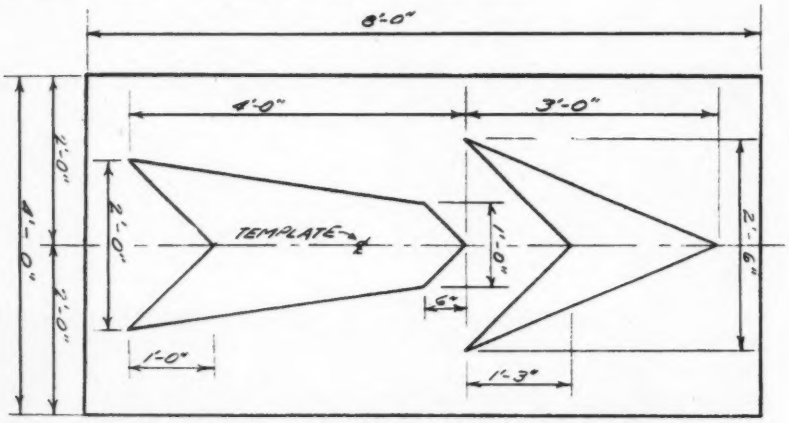
Reference Notes

Pavement Marking Templates

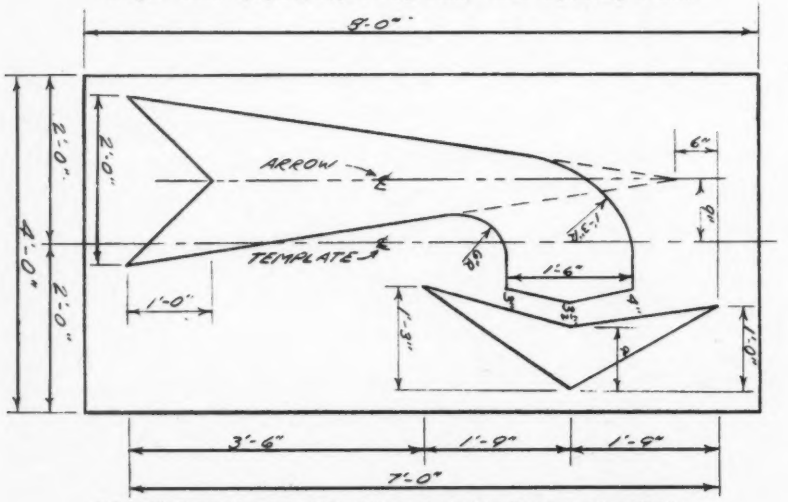
By Robert D. Dier (Mem., ITE)
City Traffic Engineer, Long Beach, California

Shown below are two templates which have been used with considerable success in Long Beach, used primarily to mark one-way streets. An effort was made to design an arrow which would have good visibility from all directions.

Comments on these designs would be welcome.



"Straight" Arrow Template, City of Long Beach, Traffic Engineering Division.



"Curved" Arrow Template, City of Long Beach, Traffic Engineering Division.

1956 PROCEEDINGS

Technical Papers Presented at the 26th Annual Meeting of the Institute of Traffic Engineers

San Francisco, September, 1956
136 Pages — $2.00

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TRAFFIC ENGINEERING IN MELBOURNE, AUSTRALIA

(Continued from page 466)

nances requiring property owners to provide parking is now being considered.

During the recent Olympic Games, the Branch had the task of organizing the parking arrangements and during the 10 day period 130,000 vehicles were parked in areas surrounding the main stadium.

As well as the overall problems minor parking problems are presented from time to time and require the resources of the Branch to find solutions.

Generally

A large amount of work has been completed in one year including the introduction of numerous "gimmicks" entirely new to the City of Melbourne. It is considered that at least the public and officials now have realized that traffic engineering can achieve practical results and definitely has a place in the "field of traffic experts." The introduction of these devices and the progress attained in one year has been directly due to a progressive and far-sighted City Council Traffic & Parking Committee, co-operative By-laws and Police Departments, an extremely helpful and co-operative press and above all the farsightedness of Council's City Engineers.

Acknowledgements

This article is presented by permission of the City Engineer, Mr. J. W. Knee. Photographs by kind permission of Herald & Weekly Times Ltd. Melbourne & Australian Information Office.

Charleston Truckers Offer Traffic Plan

A group of for-hire trucking companies in Charleston, West Virginia recently volunteered a proposal to cut down the volume of late afternoon traffic in Charleston.

Representatives of 21 trucking organizations said they hoped to halt all pick-ups and deliveries after 4 p.m. Admitting that the success of the plan depended upon the cooperation of others, the truckers said they believed it would be possible to adjust their schedules so as to keep most of the for-hire trucks off the street after 4 o'clock in the afternoon.

NEW APPOINTMENTS

(Continued from page 471)

Kansman graduated from Wayne University with a B.S. in civil engineering, and in 1949 completed the course at the Yale Bureau. He is a past president of the Michigan Section of ITE and is a registered professional engineer in Michigan.

Keith Moves to National Capital Planning Commission

Robert A. Keith (Assoc. Mem., ITE) has moved to Washington to become highway design engineer for the National Capital Planning Commission. This is the central planning agency of the Federal and District governments in the National Capital Region.

In this new assignment, Keith will be responsible for thoroughfare planning and traffic analysis, reporting directly to the director of the Commission. In addition, he will serve as liaison between the project director and the several traffic and parking consultants in the comprehensive mass transportation survey now underway in the metropolitan area.

Robert A. Keith

Before coming to Washington, Keith had served with Ramp Buildings Corporation in New York City for five years, most recently as chief planning engineer. Earlier he had worked with the Massachusetts Department of Public Works.

A civil engineering graduate of the University of New Hampshire, Keith completed the Yale course in 1952. He is a registered professional engineer and an Associate Member of ASCE.

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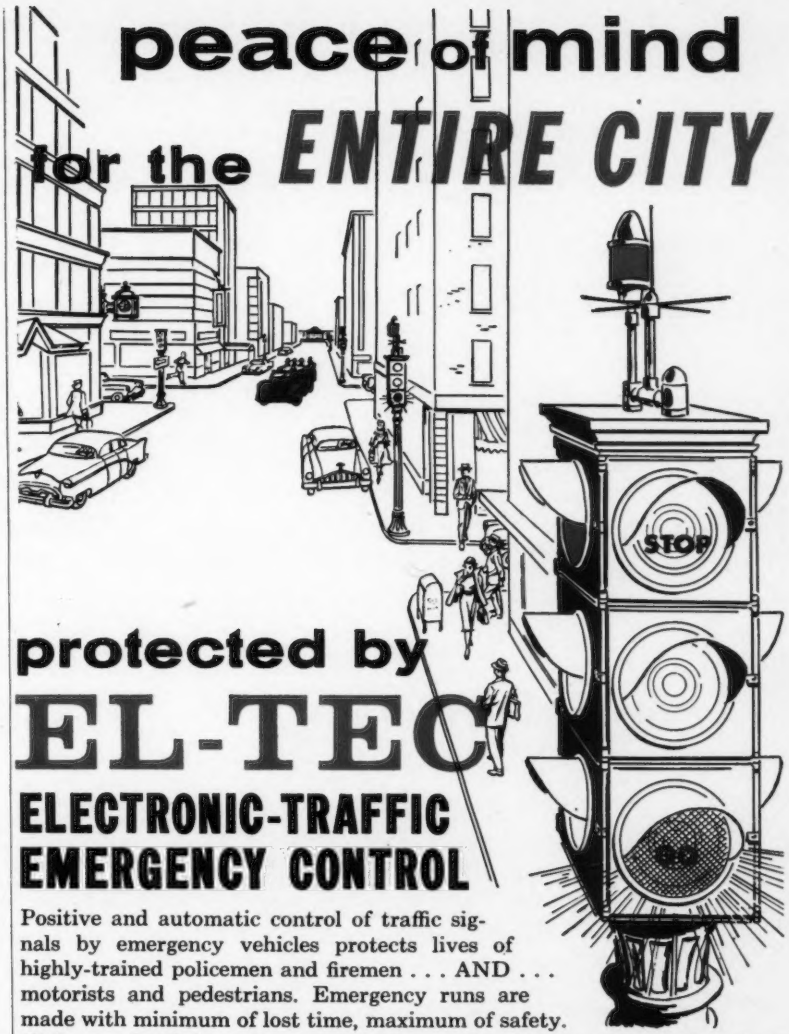

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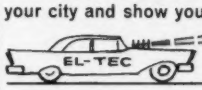

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Membership Applications

The following applications have been received since the list published in the June issue.

APPLICATIONS FOR TRANSFER

BROWN, Richard E.
Utilities Traffic Control Engineer 2, Traffic Engineering Division, 417 Lincoln Park Drive, Cincinnati 2, Ohio. May 31, 1957 for ASSOCIATE grade.

HARRIS, Robert W.
Associate Traffic Engineer, Bureau of Street Traffic & Parking, Room 306, 320 North Clark Street, Chicago 10, Illinois. May 7, 1957 for MEMBER grade.

JAFFE, Robert L.
City Traffic Engineer, City Hall, Evansville, Indiana. May 9, 1957 for ASSOCIATE grade.

NADON, Joseph D., Jr.
City Traffic Engineer, 118 South Campbell Street, El Paso, Texas. May 23, 1957 for ASSOCIATE grade.

POWILLS, Michael A., Jr.
Traffic Engineer, George W. Barton & Associates, 600 Davis Street, Evanston, Illinois. May 27, 1957 for ASSOCIATE grade.

NEW APPLICATIONS

AYERS, John L.
Traffic Engineer, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia. May 13, 1957 for JUNIOR grade.

CASEY, John R.
Senior Civil Engineer, Massachusetts Department of Public Works, 100 Nashua Street, Boston, Massachusetts. May 16, 1957 for MEMBER grade.

CORCORAN, Charles G.
Operations Engineer, Bureau of Traffic, Room 801, State Office Building, Springfield, Illinois. May 27, 1957 for MEMBER grade.

DOBBINS, James B.
Traffic Analyst, San Diego Road Department, Room 014, Civic Center, San Diego, California. June 3, 1957 for JUNIOR grade.

FERRO, William N.
Highway Planning Engineer, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia. June 3, 1957 for ASSOCIATE grade.

FIELDS, Marvin
Assistant Traffic Engineer, Ohio Department of Highways, Bureau of Traffic, 450 East Town Street, Columbus 15, Ohio. May 9, 1957 for MEMBER grade.

ISBELL, Frank L.
Highway Traffic Engineer, Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia. May 21, 1957 for ASSOCIATE grade.

KOPEC, Chester J.
Administrative Executive, Chicago Commission on Traffic & Public Safety, Room 306, City Hall, 121 North LaSalle Street, Chicago, Illinois. May 8, 1957 for ASSOCIATE grade.

McDANIEL, Billy H.
City Traffic Engineer, City Hall, Owensboro, Kentucky. May 17, 1957 for JUNIOR grade.

NAWATA, Akira
Design Engineer, Stanley, Grimble, Roblin Ltd., 11605 Jasper Avenue, Edmonton, Alberta, Canada. May 31, 1957 for JUNIOR grade.

PALMATEER, James C.
Assistant Traffic Engineer, King County Traffic Engineering Division, 905 County-City Building, Seattle 4, Washington. May 20, 1957 for ASSOCIATE grade.

THOMAS, Walter C., Jr.
Accident Investigator, Highway Traffic Technician "C", Virginia Department of Highways, 1221 East Broad Street, Richmond, Virginia. May 20, 1957 for JUNIOR grade.

WHEELER, Walter H.
Traffic & Highway Engineer, John Graham & Company, Inc., 1426 5th Avenue Building, Seattle 1, Washington. May 14, 1957 for ASSOCIATE grade.

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Auto Makers Retire from Speed Contests

The Board of Directors of the Automobile Manufacturers Association today unanimously recommended to member companies that they take no part in automobile racing or other competitive events involving tests of speed and that they refrain from suggesting speed in passenger car advertising or publicity.

The Board voiced the desire of automobile manufacturers to "encourage owners and drivers to evaluate passenger cars in terms of useful power and ability to afford safe, reliable and comfortable transportation, rather than in terms of capacity for speed."

All volume producers of passenger automobiles in the U. S. are represented in the AMA.

The resolution stated that the Association and the members of the Board "share the public interest in increasing the safety of highway travel."

"The manufacturers of automobiles," the resolution read, "have directed their efforts for many years toward developing and maintaining the performance characteristics of vehicles at levels consistent with highway conditions and the requirements of the using public."

Manufacturers can best serve the public by continuing these efforts, the document stated, "utilizing research and testing facilities, laboratories and engineering proving grounds to conduct under controlled and scientific conditions and standards."

The resolution recommended that member passenger car manufacturers:

1. Not participate in any public, competitive test of passenger cars involving or suggesting racing or speed, including acceleration tests.

2. Not encourage or assist employes, dealers or others, or furnish financial, engineering, manufacturing, advertising or public relations assistance in connection with any such event, directly or indirectly.

3. Not supply "pace cars" or "official cars" in connection with any such event.

4. Not advertise or publicize any such event or the results thereof, or assist and encourage others to do so.

5. Not advertise or publicize actual or comparative capabilities of passenger cars for speed, or specific engine size, torque, horsepower or ability to accelerate or perform, in any context that suggests speed.

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Alcoa Building Pittsburgh 19, Pa.
M. R. Schuster, Representative

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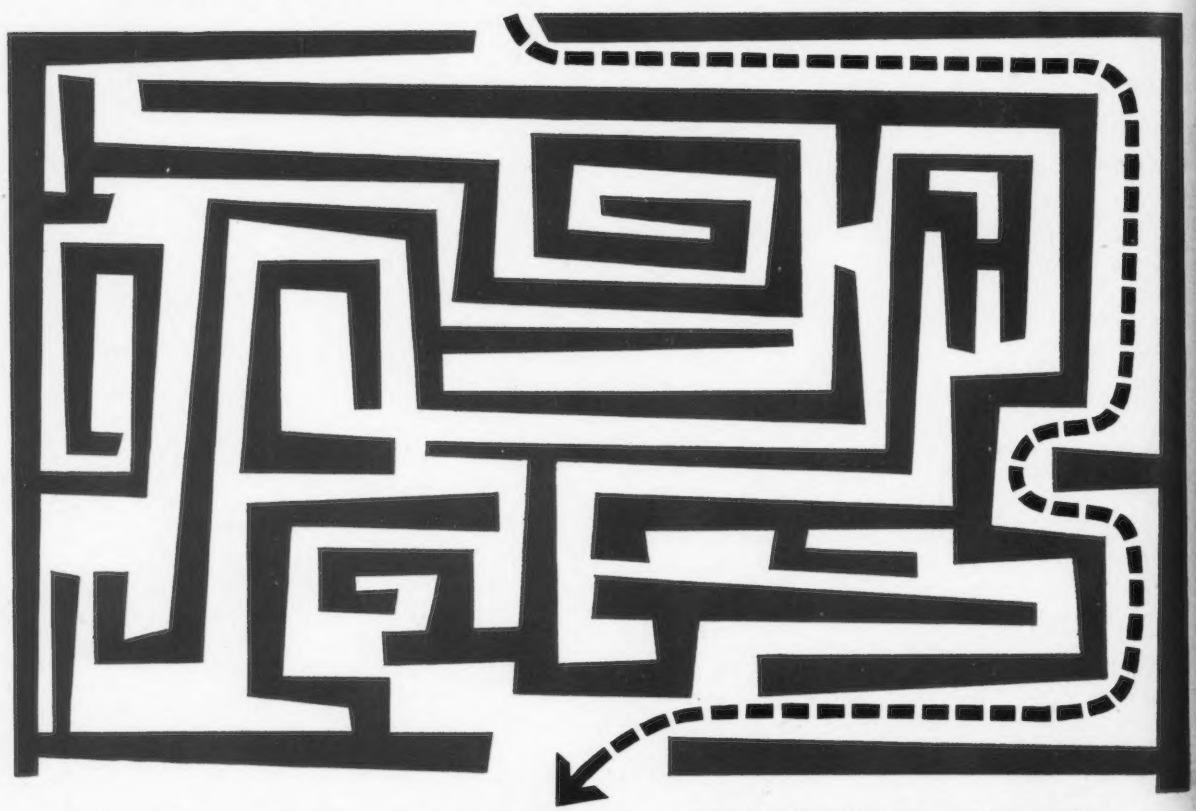

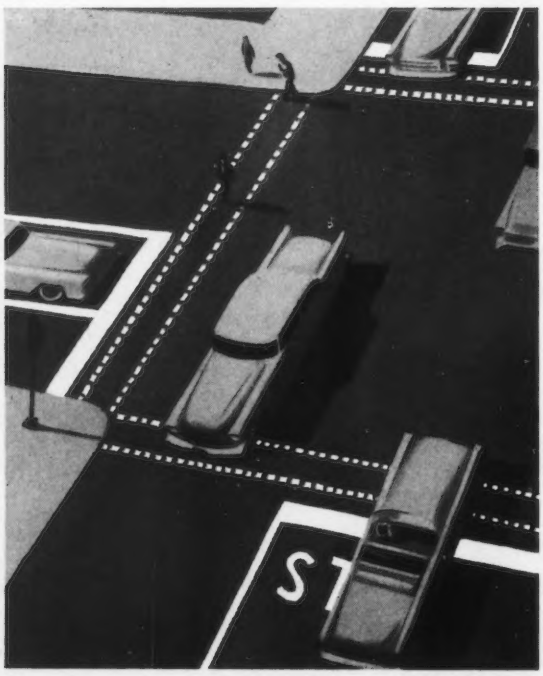

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